Participation in Employee Stock Option Exchange Programs and Future Stock Returns

by

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ABSTRACT

In this paper, I investigate whether participation in employee stock option exchange programs contains private information about future stock returns. High participation in employee stock option exchange programs is associated with negative future abnormal returns over the ensuing 12-month period. This association is moderated by the transparency of the firm's information environment: high institutional ownership and high financial statement informativeness weaken the negative relation between participation and abnormal returns. Controlling for transparency of the firms' information environment, the association between participation and future returns arises primarily from firms that allow the CEO to participate.

Κοντάκιον.

Τῇ ὑπερμάχῳ στρατηγῷ τὰ νικητήρια

ὡς λυτρωθεῖσα τῶν δεινῶν εὐχαριστήρια

ἀναγράφω σοι ἡ Πόλις σου Θεοτόκε.

Ἀλλ᾽ ὡς ἔχουσα τὸ κράτος ἀπροσμάχητον

ἐκ παντοίων με κινδύνων ἐλευθέρωσον

ἵνα κράζω σοι:

"Χαῖρε, Νύμφη ἀνύμφευτε."

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INTRODUCTION

In this study, I investigate the relation between participation in employee stock option exchange programs and future stock returns. Broad-based equity compensation is an important component of employee pay at many firms. A growing literature identifies a number of economic benefits to broad-based equity plans, including attraction and retention of the "right" employees, indexing compensation to the outside market, cash flow and tax benefits, and potential incentive effects (e.g., Bergman and Jenter 2007, Oyer and Schaefer 2005, Babenko and Tserlukevitch 2009, Hochberg and Lindsey 2010).

Despite the importance of broad-based compensation, little is known about how broad-based compensation and private information might be related.[1] Debate regarding employees' subjective valuation of equity grants continues unabated (e.g., Huddart 1994, Bergman and Jenter 2007, Farrell et al. 2011); in particular, whether equity plans allow employees to benefit at the expense of shareholders remains an open question. For example, prior research demonstrates that executives reveal private information through their purchases and sales of company shares, stock option exercises, and hedging transactions (e.g., Bartov and Mohanram 2004, Aboody et al. 2007, Seyhun 1992, Lakonishok and Lee 2001, Jagolinzer et al. 2007, Bettis et al. 2013).

Although various equity transactions by executives have been associated with subsequent stock price movements, it is unclear whether similar conclusions can be drawn for broad-based equity programs and private information. While a limited amount of research suggests that employee participants in broad-based equity plans do have

[1] In this paper, private information is defined as information that is both unknown to the market and sufficiently material to influence the firm's stock price upon being revealed.

private information that manifests itself in their decisions related to equity awards, such research concentrates on steady-state, recurring transactions such as option exercises (e.g., Huddart and Lang 2003). My focus in this paper is on participation in employee stock option exchange programs, which are relatively rare recontracting opportunities that are presented to employees after periods of significant share price decline.

Stock option exchange programs are the modern analog of option repricings, and as such, any analysis of exchange programs builds upon an extensive repricing literature. Prior research on option repricing has addressed its optimality as a recontracting device, incentive and retention effects, associated firm characteristics (including governance characteristics), implications for subsequent performance, alternative methods of resetting incentives, and related issues (see, for example, Saly 1994, Acharya et al. 2000, Chidhambaran and Prabhala 2003, Aboody et al. 2010, Chen 2004, and Kalpathy 2009).

With few exceptions (e.g., Larcker et al. 2012, Ferri 2005, Coles et al. 2006), most research on option recontracting has been framed in terms of traditional, or unilateral, repricings. Traditional repricings are characterized by a unilateral decision by the employer to reduce the exercise price of outstanding underwater options without changing any other option terms. Employees whose options are repriced know *ex ante* that they will never realize a payout worse under the new options than would have been realized under the old options, irrespective of the firm's stock price trajectory. From the employees' perspective, traditional repricings create only benefits: the new options will always be at least as preferred as the old options, and they will be strictly preferred to the

old options by employees who anticipate remaining employed by the firm through any remaining vesting period.

Employees' preferences under stock option exchange programs are less clear because, unlike traditional repricings, exchange programs create both benefits and costs to employees. In return for a lowered payout hurdle, a participating employee must accept costly award modifications such as a lower overall fair value (resulting in fewer instruments), reduced optionality/"upside," or a longer vesting period, generally in combination. Participants could be either better or worse off under the new award terms depending on the firm's stock price performance. Employers are therefore required to present employees with the choice of whether to participate, and eligible employees must assess whether accepting new award features that are economically costly is worth the benefit of a lowered payout hurdle. As a simple example, an employee who anticipates that the firm's stock price will fully recover from the negative shock and continue to grow will prefer having more options with a higher exercise price to fewer options with a lower exercise price and thus will abstain from an exchange that reduces the number of the employees' options. The reverse is true for an employee who anticipates that the firm's stock price will perform poorly. To an employee whose information about the business supports a positive outlook, reduced upside potential is perceived as very costly; to an employee whose information supports a negative outlook, it is perceived as costless. The cost-benefit assessments of both employees will be reflected in their decisions regarding whether to participate in or abstain from the exchange. The participation

rate—the percentage of eligible options tendered in the exchange—thus serves as a barometer of employees' collective sentiment regarding the firm's future prospects.

If employees make their participation decisions based on valuable information that is unknown to the rest of the market, then participation will be negatively associated with future abnormal returns. Given that exchange programs are offered after protracted share price declines and may be accompanied by considerable uncertainty[2] regarding the future stock price, this setting allows a more convincing test for the existence of private information than the less turbulent settings examined in previous studies (Huddart and Lang 2003; Babenko and Sen 2012). To the extent that employees do possess private information, its predictive value for stock returns is likely contingent on the transparency of the information environment. I expect that in a transparent information environment characterized by informative financial statements and shaped by the information gathering and processing activities of sophisticated market participants, employees are less likely to have an information advantage over outsiders.

To address my research question, I use a sample of exchange events collected from tender offer communications and initial and amended tender offer statements filed with the Securities and Exchange Commission by firms that offered employee stock option exchange programs during the five-year period from 2006 to 2010. I regress abnormal returns on participation and employ institutional ownership and financial statement informativeness as proxies for transparency of the firm's information environment. I find that participation has a negative association with future abnormal

[2] *Uncertainty* (used here in the Knightian sense) denotes situations in which the distribution of possible outcomes cannot be ascertained given available information; in contrast, *risk* indicates that the distribution of possible outcomes can be reasonably estimated using historical and/or other data (Knight 1921).

returns, and the negative association is weaker for firms with high institutional ownership.

In subsequent analysis, I split the sample into two groups according to whether the CEO was included as an eligible participant and re-perform the analysis on both samples. A comparison of the coefficients across groups shows that the negative relation between participation and future abnormal returns comes primarily from firms that include the CEO among the eligible participants. As hypothesized, the relation is weaker for firms that have high institutional ownership and high financial statement informativeness. Taken together, these results suggest that participation does embed private information about future stock returns, the transparency of a firm's information environment moderates the degree to which participation is informative, and participation in exchanges that include the CEO among eligible participants is more informative than participation in exchanges that exclude the CEO.

This paper contributes to the literature on stock option repricing, broad-based equity compensation, and the link between private information and compensation. First, utilizing a hand-collected dataset containing the details of exchanges under ASC 718 (SFAS 123R), I am able to exploit institutional features of the new regulatory regime and the availability of participation data to study the information implications of broad-based option recontracting programs. To my knowledge, this study is the first to do so in the modern stock option exchange setting. Second, I show that, under certain conditions, employees may have an information advantage over outside investors after a period of stock price underperformance.

The remainder of this paper is organized as follows. Section 2 summarizes literature and develops the theory and hypotheses; Section 3 describes the institutional environment, sample selection procedures, and measures; Section 4 reports the various analyses; and Section 5 concludes.

LITERATURE AND HYPOTHESIS DEVELOPMENT

2.1 Broad-Based Options, Stock Option Recontracting, and Private Information

Broad-based equity compensation plans are popular mechanisms for compensating employees.[3] Firms' public filings and compensation/HR industry documents frequently cite employee motivation, attraction/retention, and alignment of incentives with shareholders as fundamental reasons to administer broad-based option plans.[4] While many facets of equity compensation have been explored in an extensive body of academic research, the information implications of broad-based equity compensation have received limited treatment. This section contains a brief overview of broad-based options, stock option recontracting, and private information in order to provide context and motivation for the hypotheses that follow.

2.1.1 Broad-Based Options

Empirical research on broad-based equity plans suggests that attraction and retention of employees motivates the use of option compensation programs. Balsam and Miharjo (2007) find that in-the-money awards serve to retain rank-and-file employees. Rank-and-file option grants are used heavily among firms that operate in highly competitive labor markets and are less able to rely on the legal system to protect trade secrets (Ittner et al. 2003; Kedia and Rajgopal 2009; Erkens 2011). Additionally, firms use rank-and-file option grants as a mechanism that indexes employee compensation to reflect labor market opportunities and draws optimistic workers to the firm (Oyer 2004; Oyer and Schaefer 2005; Bergman and Jenter 2007). From a liquidity perspective, broad-

[3] I define broad-based equity compensation plans as those that include non-executive employees.
[4] See Appendix A for an example of firm communication to shareholders.

based option plans may provide additional benefits to grantor firms by improving cash flows and providing pro-cyclical tax benefits (Core and Guay 2001; Bergman and Jenter 2007; Babenko and Tserlukevitch 2009).

Studies on the incentive effects of broad-based options reach mixed conclusions: while limited evidence points to increased effort and motivation (Hochberg and Lindsey 2010), other evidence suggests that the risk of free riding dominates any potential incentive effects (e.g., Core and Guay 2001; Oyer and Schaefer 2005). Complicating matters is the fact that employees' subjective valuation of their options can deviate substantially from theoretical values (Lambert and Larcker 2001, as quoted in Knowledge@Wharton 2001; Hodge et al. 2009; Farrell et al. 2011; Ingersoll 2006). Although a firm can earn rents by granting options when employees overvalue them (Bergman and Jenter 2007), it must also contend with the possibility of employees substantially undervaluing their awards through reliance on heuristics or other non-economic factors (Hodge et al. 2009; Farrell et al. 2011).

When a firm experiences a severe, negative stock price decline, sending compensatory options out-of-the money (or "underwater"), employees' subjective valuations can become particularly relevant to employee and employer decision-making. Underwater options present employer firms with several dilemmas. First, options for which the strike price exceeds the current market price have extremely low delta[5], which

[5] Option delta refers to the ratio of the change in the value of the option to the change in the price of the underlying and thus serves as one measure of an option's incentive effects. The standard Black-Scholes-Merton (BSM) delta for a simple, non-dividend-paying European call option can be approximated as $N(d_1)$, where $N(\cdot)$ refers to the standard normal cumulative distribution function, $d_1 = [\ln(S_0/X) + (r + \sigma^2/2)T]/[\sigma\sqrt{T}]$, S_0 is the price of the underlying, X is the exercise price of the option, r is the continuously compounded risk-free interest rate, σ is the annualized standard deviation of continuously compounded

diminishes the potential incentive effects of the awards (e.g., Hall and Knox 2004). Second, the subjective value of underwater options to employees may be significantly lower than the objective fair value, and the difference between subjective and objective option values may become more negative as options go further out of the money.[6] To the extent this is the case, the weakening of the options' attraction and retention effects comes at the worst possible time—after a period of stock price underperformance, when significant focus and commitment from employees may be necessary for the firm to regroup. Third, even if underwater options are viewed as worthless by their recipients, they still count against share plan restrictions and thus may constrain a firm's ability to grant additional awards. Finally, current accounting rules (SFAS 123R/ASC 718) require the fair value of an option for amortization purposes to be determined at the grant date; subsequent fluctuations in value have no effect on the amount expensed. Firms with underwater options thus recognize expense on the financial statements period after period for those options irrespective of whether the firm is currently realizing benefits from the old awards. As discussed below, modifying the terms of outstanding options ("recontracting") may provide one channel for management to address these issues.

2.1.2 Stock Option Recontracting

Stock option recontracting offers the potential to resolve some or all of the difficulties triggered by underwater awards: depending on the specific features of the

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stock returns, and T is the option's life (see, for example, Chance 2004). In the case of a tradable, non-dividend-paying European call, the option holder's exercise strategy (i.e., "do not exercise before expiration") is clear *ex ante*. As employees who are granted stock options tend to exercise them early, an employee stock option's actual life can itself be a model output (e.g., Bettis et al. 2005). For convenience, compensation researchers often use the formula above with a rough estimate of T when obtaining a precise estimate of delta is not the goal of the study.

[6] Table 4 in Ingersoll (2006) provides a numerical example.

arrangement, recontracting may restore delta, enhance subjective value (and therefore attraction/retention effects), recapture shares for the option plan, and, due to accounting rules for modifications under ASC 718, obtain some "use" from reported stock option expense as some or all of the cost is captured in the current expense schedule. Recontracting presents a different set of concerns for shareholders, however; shareholder advocates and members of the investment community argue that option recontracting, and option repricing in particular, may give employees an unfair advantage over outside owners. Unlike employees, shareholders cannot have their equity modified to cushion the effects of stock price declines. Given that recontracting lowers the bar for realizing a positive dollar amount from the awards than originally agreed upon, recontracting can be perceived as a form of agency-induced expropriation that severs the link between employee performance and compensation.

Analytical work by Acharya et al. (2000) supplies a useful framework for organizing the competing considerations inherent in option recontracting. Their model, which is set in a two-party principal-agent framework, suggests that some degree of recontracting is generally optimal, but the level of its desirability is contingent on the manager's degree of control over the returns distribution, the cost of replacing the manager, and the extent to which the manager can manipulate the process. Empirical studies on repricings have largely borne out these predictions: smaller firms operating in highly competitive labor markets are more likely to reprice (Chidambaran and Prabhala 2003; Carter and Lynch 2004; Kalpathy 2009). Aboody et al. (2010) find that repricing effectively resets incentives for executives but not rank-and-file employees.

Empirical studies testing whether agency conflicts influence repricing come to varying conclusions. While early work suggests that agency conflicts play a role in the decision to reprice (e.g., Chance et al. 2000), results from later studies that employ more robust methods do not appear to support this hypothesis (Chidambaran and Prabhala 2003; Kalpathy 2009). Evidence does not support managerial entrenchment as a motivation for repricing—Chidambaran and Prabhala (2003) find that repricing firms have greater executive turnover than non-repricing firms, and Carter and Lynch (2004) find that repricing reduces rank-and-file turnover but not executive turnover. However, Callahan et al. (2004) suggest that repricings involving CEOs may be timed to take advantage of earnings releases, and Ferri (2005) notes that when CEO options are repriced, subsequent short-term stock price movements are more favorable. Both Callahan et al. (2004) and Ferri (2005) employ data from time periods in which timely disclosure of option recontracting events was not required. However, Grein et al. (2005) find the opposite in a setting with immediate disclosure (Canada). Thus, they conclude that repricing has positive welfare effects.

The structure of option recontracting initiatives over time reflects evolving regulatory mandates and institutional pressures, which are described in Ferri (2005) and Larcker et al. (2012). As many empirical papers on option recontracting use relatively old data, extant research on stock option recontracting concentrates primarily on the most prevalent method of option recontracting during that timeframe: traditional, unilateral option repricings in which the only modification to the original award is a lower exercise price. A smaller subset of academic papers address 6 & 1 exchanges, which were pre-

ASC 718 option exchanges that had an unusual timing feature: employees who chose to participate in the exchange received their new options at least six months after the old options were cancelled (Carter et al. 2003; Balachandran et al. 2004; Coles et al. 2006; Zamora 2008). Waiting at least six months ("six months and a day") to provide employees with the new awards allowed recontracting firms to avoid recognizing compensation expense under FIN 44.

Lee (2009) examines a sample of 6 & 1 exchange programs that straddles the bursting of the technology bubble and concludes that employees processed multi-dimensional information about 6 & 1 programs in a sophisticated fashion, but the market fully anticipated employees' participation decisions despite their complexity. In a similar vein, Coles et al. (2006) identify another area in which the market fully captures information relevant to 6 & 1 exchanges. Specifically, they examine accruals activity during the six-month time lag between the cancellation of old options and the granting of new options under the FIN 44 regime, as the lag created perverse incentives for managers to temporarily manipulate the stock price downward to secure lower exercise prices. They find evidence that the earnings of 6 & 1 exchange firms were indeed managed downward during the six-month window, but these attempts were not successful because the market "saw through" the manipulation of accruals.

Incorporating a six-month delay to issue replacement awards during an exchange became obsolete by 2006 (when SFAS 123R/ASC 718 took full effect), as the maneuver no longer served to evade expense recognition. Nevertheless, the new expensing and modification accounting requirements, the constriction of board power due to NYSE and

NASDAQ rules, and the heightened role of proxy advisors in the wake of SEC regulations have rendered option exchanges the most prevalent form of recontracting in recent years (Larcker et al. 2012).

To date, few option recontracting papers have incorporated structural features associated with exchanges. Acharya et al. (2000), Ferri (2005), Lee (2009) and Larcker et al. (2012) are exceptions because their analyses in some way incorporate the potential for employee sacrifice. Acharya et al. (2000) allows for the possibility that underwater options will be replaced with a different number of new options. Ferri (2005) examines cross-sectional structural features of programs held in 1997, providing rich descriptive statistics for the pre-FIN 44 period. Lee (2009) constructs a descriptive model of participation in 6 & 1 exchanges that occur during a four-year period starting in December 1998, noting that employees prefer instruments with more favorable characteristics. Finally, Larcker et al. (2012) evaluate the worth of proxy advisor recommendations using the modern exchanges setting by testing the market's reaction to program restrictions. To my knowledge, no papers to date fully exploit the modern employee stock option exchange setting to formulate and test hypotheses concerning private information. Extant research on private information and firm employees is discussed in the next section.

2.1.3 Private Information and Firm Employees

A significant body of literature demonstrates that executives have valuable, nonpublic information about the prospects of their firms that is conveyed through both their open-market and off-market transactions under various conditions (e.g., Jaffe 1974,

Seyhun 1992, Bettis et al. 1997, Lakonishok and Lee 2001, and Jagolinzer et al. 2007). Studies examining decisions specifically related to executives' equity compensation instruments come to similar conclusions. Executives' stock option exercises predict future earnings reversals that analysts do not anticipate (Bartov and Mohanram 2004), and executives' decisions to exercise, exercise and hold, or exercise and sell have implications for future stock returns (Huddart and Lang 2003; Aboody et al. 2007).

Although a degree of consensus exists in the literature regarding executives and the private information their compensation-related transactions reveal, whether and under what conditions non-executive employees' transactions reveal private information has received little attention (Babenko and Sen 2012). Data restrictions have likely played a role in the limited empirical evidence regarding non-executive employees and private information. In the United States, only the executive officers (together with directors and owners of more than 10% of the firm's shares) are classified as Section 16 insiders who are required to disclose details of their transactions in the firm's shares and related derivatives.

Despite limited data availability, several studies address the question of employee private information in various equity program contexts and obtain mixed results regarding the degree to which private information is distributed within equity-granting firms. Core and Guay (2001) and Huddart and Lang (2003) both examine non-executive employee stock option exercises; however, Core and Guay (2001) find no evidence of private information among non-executives, while Huddart and Lang (2003) find that non-executives' exercises are just as informative for future returns as those of executives.

After accounting for various program features, Lee (2009) concludes that employee participation in 6 & 1 exchanges does not contain any information that has not already been anticipated by the market. More recently, Babenko and Sen (2012) find that strong employee participation in employee stock purchase plans is associated with positive future abnormal returns. Both Huddart and Lang (2003) and Babenko and Sen (2012) use data generated for ongoing decisions under relatively normal conditions. It is plausible that turbulence may cause changes to the information distribution within a firm and/or the extent to which information held by employees is useful for predicting future performance, rendering prior research findings inapplicable under more severe conditions. Samples of 6 & 1 exchanges, such as the one used in Lee (2009), cannot readily be used to study information effects because the six-month time lag between the cancellation of the old options and issuance of new options presents opportunities to influence the value of the replacement awards and firm performance simultaneously. In contrast to 6 & 1 exchanges, modern stock option exchanges are discrete events that are suitable for the analysis that follows.

2.2 The Potential Links between Exchange Participation and Private Information

2.2.1 Participation and Private Information

The question of whether employees collectively have an information advantage over outside investors has implications for valuation, internal governance, and regulation. Employer firms estimating the cost of equity programs do not currently build explicit estimates of employee information advantage into their models. To the extent that such an advantage exists, failing to incorporate the associated costs may bias the firm's

estimates downward (Huddart and Lang 2003; Babenko and Sen 2012). Additionally, such firms maintain detailed records of employee award transactions to facilitate HR, reporting, and tax requirements. If employees do possess private information, performing regular analyses of the data may yield valuable insights for improving control and retention systems—particularly in operationally diverse and/or geographically distributed firms (e.g., Babenko and Sen 2012, Jensen and Meckling 1995). Finally, current regulations do not require non-executive officers to report transactions in company securities.[7] If employees who are not required to report their trades in company securities are consistently shown to be transacting based on private information, regulators might have cause to re-evaluate the consistency of current reporting requirements.

Employee stock option exchanges provide an excellent setting for examining private information held by employees under turbulent conditions. Unilaterally lowering the exercise price of the underwater options while holding all other terms constant, as done in a traditional option repricing, does not require employee consent because the employee is better off under all states of nature having received an equal number of new awards with a lower exercise price. In contrast, an employee who participates in a stock option exchange is generally better off for having participated if the stock price does not rebound "too much" or "too quickly." In return for replacement compensation that has a higher anticipated probability of payout, the employee must accept sacrificial award features, such as lengthened vesting, a reduction in upside potential due to a reduced number of replacement options, and/or a complete loss of optionality as the underwater

[7] Section 16 of the Securities and Exchange Act of 1934 generally requires executive officers, directors, and owners of more than 10% of a firm's shares (commonly referred to as "Section 16 insiders") to report their transactions in the firm's securities to the SEC on Form 4 within 2 business days of execution.

options are replaced with a relatively small quantity of restricted stock units or a cash payout based on the underwater options' (now miniscule) fair value. Thus, the replacement compensation only exceeds the old options in attractiveness to the extent the employee possesses information that suggests that subsequent increases in the stock price over the remaining life of the options will be muted. The cost-benefit tradeoff is reflected in firms' communications with employees, which state explicitly that participation may result in a worse outcome and at times, even provide tools for employees to construct their own quantitative forecasts (see "Risks that are Specific to this Offer" in Appendix B and the breakeven calculator in Figure 1 for examples).

In choosing whether to participate in the exchange or abstain, employees reveal their outlook about future firm performance: a higher participation rate indicates that employees anticipate lackluster future performance. If employees' decisions in the aggregate reflect private information, the participation rate will be associated with the firm's future returns. The first hypothesis is therefore stated as follows.

H1: *The relation between participation and abnormal returns is negative.*

My primary hypothesis rests on the assumption that any private information held by employees will become at least partially impounded into the stock price during the subsequent period under examination. In this sense, H1 is a joint hypothesis that employees have private information *and* that the private information they hold will influence returns by the end of the longest window tested. To the extent that employees hold private information about the firm's prospects that is not eventually reflected in

prices as a result of either public disclosure or informed trading during the period examined, there is a bias against finding any support for H1.

2.2.2 Transparency of the Information Environment

I anticipate that the relation between participation and abnormal returns will be affected by the transparency of the firm's information environment. I define a transparent information environment as one in which the combination of publicly available information and costly information production activities by sophisticated market participants result in more informative stock prices as information is either disseminated to the investing public (in the case of financial statements) or impounded directly into returns through trades (in the case of institutional ownership). When an exchange firm's information environment is relatively transparent, I expect that its employees will have less of an information advantage over other market participants and vice versa. This reasoning suggests the following umbrella hypothesis:

H2: *Transparency of the information environment weakens the relation between participation and abnormal returns.*

For my main tests, I employ two proxies to capture transparency of the firm's information environment: institutional ownership and financial statement informativeness, as measured by the R^2 of the regression of price on earnings and book value for an individual firm. In supplemental analyses, I discuss alternative proxies such as analyst following and size.

First, prior research suggests that higher institutional ownership causes stock prices to be more informative with respect to both future earnings and non-earnings information due to institutional investors' advanced information gathering and processing

activities and access to other sources of private information (e.g., Jiambalvo et al. 2002, Bushman et al. 2010). Additionally, institutional ownership has been associated with tighter monitoring and stronger governance pressures (e.g., Chung and Zhang 2011, Larcker et al. 2012). I use the percentage of institutional ownership as a proxy for the extent to which the firm is subject to the monitoring and information production activities of a sophisticated ownership base and anticipate that higher institutional ownership will lead participation to be less informative.

H2A: *Higher institutional ownership weakens the relation between participation and abnormal returns.*

Second, the quality of a firm's financial statements comprises an important component of the information environment. The R^2 from a regression of price on earnings and book value serves as a proxy for financial statement informativeness, or value relevance (Frankel and Li 2004). In addition to reflecting the extent to which financial statement values themselves are associated with price, the R^2 measure summarizes the extent to which other information that influences price is subsumed by financial statement data (Francis and Schipper 1999). I anticipate that a higher R^2 will result in a less informative participation rate.

H2B: *Higher financial statement informativeness weakens the relation between participation and abnormal returns.*

INSTITUTIONAL DETAILS, SAMPLE SELECTION, AND MEASURES

3.1 Institutional Details for Employee Stock Option Exchanges

Employers wishing to implement an employee stock option exchange program consider multiple issues in selecting an exchange structure before executing the program.[8] Broadly speaking, the firm must balance the goal of constructing a package that is appealing to participants—thus satisfying retention objectives—with the need to maintain positive shareholder relations. With these competing objectives in mind, the firm selects the type of replacement compensation that will be used (options, restricted stock, restricted stock units, or cash), which out-of-the-money options will be eligible for exchange, and which employees and directors will be eligible to participate. Further, the firm assesses whether recognizing incremental expense on the financial statements is acceptable or if no additional expense should be recognized, as financial statement constraints can limit design choices. If recognizing additional compensation expense in connection with the exchange is not perceived as a viable path forward, the firm may undertake a value-for-value exchange, which constrains the fair value of the replacement compensation to be no greater than the fair value of the underwater options relinquished as of the exchange date. The more out-of-the-money the old options become, the more their fair value declines, resulting in a less attractive exchange package. Said differently, in a value-for-value exchange, the number of old options required to obtain one new option or other unit of replacement compensation ("the exchange ratio") will be higher when the old options are extremely underwater.

[8] Client bulletins such as "Repricing Underwater Stock Options" by White & Case LLP (October 2008) and "Underwater Stock Options and Stock Option Exchange Programs" by Shearman & Sterling LLP (April 2, 2009) summarize issues for publicly traded firms to consider.

If the firm trades on the NYSE or Nasdaq exchange and the original equity incentive plan documents do not explicitly specify that option repricing or exchange programs are authorized under the plan, the firm must obtain shareholder approval in order to undertake an exchange program if the replacement compensation involves equity instruments.[9] The degree of influence that the shareholder approval process exerts on the exchange program depends on the nature of the shareholder base. If shares are concentrated among "friendly" owners, management, and/or the board, then the firm will face fewer constraints in structuring the exchange. If, however, ownership is concentrated among institutions reliant on proxy advisors, the terms of the exchange will likely be heavily influenced by the policies of those advisors. This is particularly true for Institutional Shareholder Services, the largest of the advisors, as ISS policy is to recommend that votes be withheld from directors who approve exchanges that are not put to a shareholder vote (see Larcker et al. 2012 for further discussion of ISS). Value-for-value exchanges are highly favored by ISS and some shareholder advocates, which may lead to the adoption of this structure in order to obtain shareholder approval. Proxy solicitors may be engaged by the firm to assess the receptiveness of major shareholders to an exchange and to the proposed plan terms, and forecast shareholder votes under different scenarios.

If shareholder approval is necessary, the firm may either put forth the proposal for a vote at the annual meeting or call a special meeting. The firm must file a preliminary

[9] Per SEC Release No. 34-48108, dated June 30, 2003. This rule also stopped brokers from voting shares held in street name in the absence of client instructions when the proposals concern equity plan adoptions or material amendments, with limited exceptions. Thus, for stock option recontracting, the handling of broker non-votes was consistent prior to the more recent and comprehensive restrictions on broker votes imposed by the Dodd-Frank Act and NYSE Rule 452 amendments.

proxy statement (PRE 14A) with the SEC for review 10 days prior to sending the final proxy statement to shareholders and filing the final proxy statement (DEF 14A) with the SEC. Given that stock prices can be highly volatile and the time that elapses between the planning of the exchange and obtaining shareholder approval might bring improvements in the stock price (or conversely, further declines that render the exchange ratio under a value-for-value exchange too high), firms with option plans requiring shareholder approval often note in their filings and in communication with employees that the exchange might not be conducted even if approval is granted.[10]

Regardless of whether shareholder approval is sought, communication regarding an exchange or proposed exchange is filed with the SEC on Form TO-C and includes such items as public announcements, e-mails alerting employees to the proposed exchange, and slide decks from presentations explaining the program to employees. At the commencement of the exchange, the firm files Form TO-I formally detailing the initial tender offer terms. The tender offer must remain open to eligible employees for at least 20 business days. The SEC staff may review the tender offer and require amendments to clarify aspects of the exchange, which would be filed by the company on an amended tender offer statement (Form SC TO-I/A). Finally, when the window closes, the company is required to file an amended tender offer statement (also Form SC TO-I/A), which discloses the participation rate. Exchange participants who are executives or directors are required to file details regarding the options surrendered and replacement

[10] The time between the date on which the final proxy statement is available and the shareholder meeting date depends on the method used to distribute meeting materials, applicable state law, and the anticipated time necessary to complete the proxy solicitation process.

compensation obtained on Form 4 within two days of the options being accepted by the firm.

3.2 Sample of Exchange Events

My sample consists of employee stock option exchanges that occur between 2006 and 2010. The initial year of the sample, 2006, is the first year in which all publicly traded firms were required to implement ASC 718 (SFAS 123R).[11] The standard requires that firms measure the fair value of stock option compensation as of the grant date and amortize that value over an employee's service period. It also provides a consistent modification accounting framework that influences firms' decisions regarding option recontracting programs. In addition to a stable accounting regime, this sample timeframe provides the ability to examine modern recontracting features while preserving my ability to examine subsequent returns over a longer window. The sample selection process is summarized in Table 1, Panel A.

Using the SEC's EDGAR website, I first extract all Form SC TO-C filings filed between January 1, 2006 and December 31, 2010. The vast majority of these filings relate to more common transactions such as mergers and acquisitions, share repurchases, and redemption or conversion of various debt and equity instruments. From this pool of 1,882 documents, I eliminate non-exchange tender offers (1,487), and exchanges made to correct the negative tax effects of backdated stock options (40) because the purpose and motivation of these exchanges is fundamentally different from those of a standard employee stock option exchange. This results in an intermediate count of 355 tender offer

[11] On April 14, 2005, the SEC delayed the original implementation timeline for publicly traded firms from the first interim period beginning after June 15, 2005 to the first full-year period beginning after June 15, 2005.

communication documents. I then note that 201 of these documents are follow-up communications that refer to exchanges that are already included in the count. Eliminating these supplemental filings results in an intermediate count of 154 documents.

Next I extract all Form SC TO-I (6,737) and Form SC TO-I/A (4,294) documents filed during the same timeframe to seek matches for the subsample of Form SC TO-C documents and eliminate one exchange that was not completed. Noting that the SC TO-C forms do not always contain the terms necessary to flag the right documents for further inspection (creating the possibility of "lost" observations), I screen the remaining SC TO-I and SC TO-I/A forms for relevant terms using the same procedures used for the SC TO-C documents and identify an additional 105 completed exchange events for a total of 258 unique exchanges.[12] This sample is comparable to the sample of 264 exchange observations reported in the Larcker et al. (2012) study of proxy advisor recommendations, which covers a partially overlapping time period (2004 to 2009).

For these 258 events, I attempt to use the disclosed CUSIP and CIK codes obtained directly from SEC filings to obtain PERMNOs for merging data with CRSP. However, I find that over one quarter of the firms' disclosed codes require searches through other databases besides CRSP to obtain valid matches and some are not covered at all by CRSP. After constructing the variables described in subsequent sections from the CRSP Monthly Stock, Monthly Stock Event, Delisting and Daily Stock files; the

[12]These steps are accomplished by first extracting all tender offer filings using publicly available PERL code authored by Andrew Leone (http://sbaleone.bus.miami.edu/PERLCOURSE/Perl_Resources.html) to download the filings and a commercially prepared script to flag potential exchanges, thereby narrowing the search to the most relevant documents to facilitate visual inspection and hand collection. Documents flagged for inspection contain phrases such as "offer to exchange," "value-for-value," "eligible option," "eligible employee," "scholes" and "vesting."

I/B/E/S Summary History file and Internet Wayback Machine archives; the Compustat Fundamentals Annual file; and the Thomson Reuters Institutional Holdings 13F Database and merging the data with the SEC data, 209 usable observations remain for the primary analyses.

Table 1, Panel B summarizes the terms of the exchange programs that are presented to employees. Well over half of all exchanges (65.6%) have a value-for-value structure, which constrains the fair value of the replacement compensation to be no greater than the fair value of the old, out-of-the-money options as measured at the time of the exchange. Options are the most common form of replacement compensation, offered in 64.9% of exchanges during the period, with the remainder of the exchanges offering restricted stock or cash. The majority of exchanges attach additional vesting time to the replacement compensation (73.7%).[13] The percentages of the sample offering value-for-value terms and requiring additional vesting time are similar to those reported by Larcker et al. (2012). As seen in Panel C, Healthcare, Medical Equipment and Pharmaceutical Products (13.3%), Personal and Business Services (14.3%) and Business Equipment (38.6%) are the industries with the largest concentrations of exchange firms. The latter two industries include "high-tech" firms, which constitute a significant percentage of repricing firms in prior studies.

Table 2 contains a summary of exchange firm characteristics alongside those of all Compustat firms reporting nonzero stock compensation expense during the 2006 to 2010 period. On average, exchange firms are smaller, less profitable, and less indebted

[13] Vesting extensions are distinct from extensions in an option's time to expiration. A vesting extension does not lengthen the time that an option is "alive" and thus does not increase an option's value to the employee.

than their non-exchange counterparts. Exchange firms also report weaker operating cash flows than firms in the general sample and lower R&D expense per dollar of revenue; moreover, exchange firms have lower Tobin's Q. Unsurprisingly, exchange firms have options that are more deeply out of the money.

3.3 Description of Measures

Testing for an association between employee stock option exchange participation and subsequent returns requires an intermediate- to long-run return measure for use as a dependent variable. Abnormal stock returns, $ABRET_M$, is the firm's characteristics-based buy-and-hold abnormal return calculated as in Daniel et al. (1997), using the method of delisting adjustments introduced in Beaver et al. (2007).[14] The characteristics-based approach has the advantage of yielding higher power to detect abnormal returns and lower standard errors than would be available via factor models (Daniel et al. 1997) and does not impose the constraint of constant coefficients on factors across portfolios. As I do not have an *ex ante* expectation of how long any private information contained in stock option exchange participation might take to be revealed to the market, I calculate abnormal returns over three windows that start the month following the end of the exchange initiation month and end six, nine, and 12 months later.

Calculation of $ABRET_M$ proceeds as follows. I first construct 125 value-weighted characteristics-based portfolios based on size, book-to-market ratio, and momentum groupings, following Daniel et al. (1997). I then match my sample of exchange firms to

[14] The SAS file used to construct the delistings-adjusted benchmarks was adapted from code authored by Rabih Moussawi and Gjergji Cici at WRDS (http://wrds-web.wharton.upenn.edu/wrds/research/applications/port/dgtw) and integrated with code by Richard Price (http://richardp.bus.usu.edu/research/).

the appropriate benchmark portfolios and compute buy-and-hold abnormal returns for each window. To obtain the characteristics-based portfolio groupings, all NYSE, Nasdaq, and AMEX stocks are sorted into quintiles based on NYSE market capitalization breakpoints as of midyear. Next, stocks within each of the size quintiles are sorted into quintiles based on the industry-adjusted book-to-market ratio as of the prior year end, resulting in 25 intermediate portfolio groupings. The final 125 portfolios are obtained by sorting each of the intermediate portfolios into quintiles based on trailing 11-month momentum measured from July of the prior year to May of the current year (one month is omitted from the momentum computation to avoid the potential effect of month-to-month return reversals, as documented in Jegadeesh 1990).

The Beaver et al. (2007) delisting adjustment algorithm provides a more refined way of using available information from comparable delisting events when a particular firm's delisting return is missing. When a delisted firm's delisting return is available in CRSP, it is appropriately compounded with the delisted firm's prior returns to obtain a cumulative return through the date of the delisting. When a delisted firm's delisting return is not available in CRSP, the average delisting return for delisting events of the same type is substituted in place of the firm's actual delisting return. Once the cumulative return through the delisting date is obtained (by either method), it is then reinvested in the appropriate size index decile portfolio.

Additional measures used in the analysis are as follows. The exchange participation rate (*PCT*) is the percentage of eligible options that were exchanged as

disclosed in the amended tender offer statement after the exchange closes.[15] Institutional ownership (*IO*) is the percentage of shares held by institutions as of the most recent quarter ended prior to exchange initiation, as reported on Form 13F and captured in the Thomson Reuters Institutional Holdings Database. *FRSQ* is the R^2 of the firm's regression of the stock price one quarter after year end on the annual earnings and year-end book value figures (Frankel and Li 2004).[16] All data for R^2 is taken from Compustat. *FOLLOW* is the natural logarithm of one plus the maximum number of analysts issuing quarterly estimates during the prior year (Frankel and Li 2004). Where available, these data are obtained from I/B/E/S. For the 41 observations that are missing from I/B/E/S, I use the Internet Archive Wayback Machine (http://archive.org) to access archived Yahoo! Finance Analyst Estimates pages to obtain the maximum number of analysts issuing estimates for the firm during the closest available period. Analyst following is not available from either source in 14 cases and is therefore set to zero. *NOCEO* is an indicator variable set equal to 1 if the CEO is excluded from the exchange, and 0 otherwise, as disclosed in the initial tender offer statement.

3.4 Variable Descriptives

Descriptive statistics and correlations for the variables are presented in Tables 2 and 3. On average, employees elect to exchange most of the options that the firm designates as eligible. Mean (median) participation is relatively high at 80.5% (85%), with an interquartile range of 0.716 to 0.949. The Pearson correlations *PCT-ABRET6*,

[15] Interestingly, the number of employees eligible for the exchange is almost never disclosed, and the number of employees who actually participate is seldom disclosed.

[16] For example, the regression model for a calendar-year firm is $P_{3/31/t+1} = \gamma_0 + \gamma_1 EPS_{12/31/t} + \gamma_2 BVE_{12/31/t} + \varepsilon$. At least five observations must be available for the R^2 value to be used in the sample.

PCT-ABRET9 and *PCT-ABRET12* are negative, but are not statistically significant. Extreme performance appears to heavily influence the returns measures: *ABRET6*, *ABRET9*, and *ABRET12* have large standard deviations and differences between mean and median values. The average buy-and-hold abnormal return for the 12-month window is 23.9%, but the median is negative 3.3%.

Institutions hold 59.3% of the average sample firm's outstanding shares. The Pearson correlations between *IO* and each of the three returns measures are negative; only the correlation with *ABRET12* has no statistical significance. The mean *FRSQ* indicates that an average of 51% of the stock price can be explained by reported earnings and book values for firms in the sample, although a large interquartile range suggests variability among sample firms. The average number of analysts issuing forecasts is 8.79, and a standard deviation of 7.05 indicates a high degree of variability in the sample (raw figures not tabulated). Over half of sample firms (56%) bar the CEO from participating in the exchange. *NOCEO* is negatively and significantly correlated with participation, and positively and significantly correlated with both institutional ownership and the *FOLLOW* variable. Both Pearson and Spearman correlations between *IO* and *FOLLOW* are material and statistically significant. *FRSQ* does not exhibit significant unconditional correlations with the other variables.

MODELS AND EMPIRICAL RESULTS

4.1 Tests of the Association between Participation and Abnormal Returns

The following linear regression model is used to test my hypotheses:

$$ABRET_M = \alpha_0 + \alpha_1 PCT + \alpha_2 IO + \alpha_3 PCT\_IO + \alpha_4 FRSQ + \alpha_5 PCT\_FRSQ + \varepsilon$$

The model expresses buy-and-hold abnormal returns as a function of participation and the information environment proxies. *PCT_IO* and *PCT_FRSQ* represent interactions between the individual transparency proxies and participation. In keeping with the first two hypotheses, I expect a negative coefficient on *PCT* and positive coefficients on the interaction terms.

Table 5 displays six-, nine- and 12-month regression results for the full sample. The estimates support the primary hypothesis that the participation rate is negatively associated with future abnormal returns (H1), and lend some support to the hypothesis that transparency weakens the association between participation and returns (H2). The coefficient on *PCT* is negative and marginally significant in the six-month regression (p=0.061), and is negative and significant at conventional levels in the nine- and 12-month regressions (p=0.022; p=0.048). *PCT_IO* has positive and significant coefficients for all three time periods (the coefficient in the 12-month regression is marginally significant), but the coefficients on *PCT_FRSQ* are insignificant across regressions. Although I do not formulate expectations regarding the magnitude or direction of the information environment main effects, I note that institutional ownership, but not financial statement informativeness, has a significant main effect in the set of pooled regressions. The negative relation between *IO* and abnormal returns may be explained in

part by the high percentage (~40%) of microcap and nanocap firms in the sample, as institutions own a material percentage of shares for most of these sample firms.[17] Although such investments may allow institutional investors greater opportunities to exploit their comparative advantage in gathering and processing information, they may also be more speculative.

The overall effect of participation in the models is economically material. When the six-month model is evaluated using mean values for *PCT* and *IO* and a zero value for *FRSQ*, increasing participation by one standard deviation results in a 5.55 percentage point decline in buy-and-hold abnormal returns.[18] Similarly, a one standard deviation increase in participation yields a 32.2 percentage point decline in the nine-month period, which fades to 6.6 percentage points in the 12-month period as additional information is incorporated into the stock price.

4.2 The Implications of CEO Inclusion

As discussed in section 2.1.3, a substantial body of research demonstrates that executives, and in particular the CEO, have private information about the firm's future performance that is reflected in their decisions related to their equity compensation instruments. To examine the effect of CEO inclusion, I separate exchanges into categories according to whether the CEO is an eligible participant.

I use CEO eligibility rather than the eligibility of all executives and directors as the partitioning variable for two reasons. First, the CEO eligibility partition facilitates

[17] Microcap (nanocap) stocks are those that have market capitalizations of less than $200 million ($50 million).

[18] *FRSQ* is evaluated at zero due to its lack of statistical significance, but using the mean value of *FRSQ* instead results in an estimated decline in abnormal returns of 23.18 percentage points in response to a one standard deviation increase in *PCT* for the six-month regression.

comparison with prior research that gives special attention to the role of the CEO in a variety of contexts. Second, CEO eligibility is clearly identified across the sample, which renders it an ideal variable for test construction. Some firms exclude various high-ranking employees at the executive level who are not named executive officers while others do not, and some exclude certain executives or directors but not both. This heterogeneity among treatment of executives and directors does not lend itself to clean partitioning, unlike CEO eligibility.

I partition the sample into two groups according to whether the CEO is eligible to participate in the exchange, then re-run the models on both samples to visually compare coefficients across the partition without three-way interaction terms. Table 6 presents regression results for the subset of exchanges that include the CEO among eligible employees. Consistent with the results of the full sample analysis, the coefficients on *PCT* are negative and significant across the six-, nine- and 12-month periods. Further, the participation-institutional ownership interactions, *PCT_IO*, are significant in the six-month window and marginally significant in the nine-month window. The *PCT_FRSQ* interactions are positive and marginally significant in the first two windows. Table 7 presents regression results for the subset of exchanges that exclude the CEO. Neither participation nor the interaction terms are significant in the regressions for this subsample.

To facilitate formal testing, I also employ a pooled model that includes a full set of *NOCEO* interaction terms (not tabulated). The coefficients on *PCT* are statistically different across samples for the six-, nine- and 12-month periods (all p-values < 0.01).

The coefficients on *PCT_FRSQ* and *NOCEO_PCT_FRSQ* are marginally statistically different for the six- and nine-month windows (p-values of 0.058 and 0.055, respectively), but not the 12-month window, while the coefficients on *PCT_IO* and *NOCEO_PCT_IO* are statistically different for the six-month period only (p=0.060). The combined hypothesis that *NOCEO_PCT*, *NOCEO_PCT_IO*, and *NOCEO_PCT_FRSQ* are all zero is rejected across all periods, with p-values for the Wald test equal to 0.036 for the three-month regression, 0.017 for the six-month regression, and 0.062 for the 12-month regression. In sum, results from the separate regressions and the CEO pooled interaction model suggest that the effect of participation is stronger for firms that include the CEO among employees eligible for the exchange.

4.3 Analyst Following as an Alternative Information Environment Variable

Institutional ownership and the informativeness of the firm's financial statements capture only two dimensions of the multifaceted information environment of a firm. As the model in this study already includes two interaction terms, inclusion of additional information environment variables and their accompanying interactions in the regression creates severe multicollinearity issues. To test whether the conclusions of this study are robust to other information environment dimensions without increasing the number of additional variables and interactions, I employ alternative models that use analyst following and size as information environment variables of interest.

Prior research has frequently examined analyst following and institutional ownership together as information environment variables (e.g., O'Brian and Bushnan 1990, Ayers and Freeman 2003). Higher analyst following has been associated with

greater external monitoring and improved liquidity as information production and dissemination for the firm increases through analysts' activities (see Yu 2008 and Kirk 2011 for recent examples). In the context of firms with ESPPs, Babenko and Sen (2012) find that employees' purchases have greater predictive power for smaller firms with less analyst coverage. However, the relatively strong correlation between analyst following and size (correlation = 0.57, p-value < 0.01) and the use of a size-controlled returns measure may result in the variable yielding little explanatory power (due to the size adjustment) while contributing to the multicollinearity problem (due to the presence of an additional interaction term). Thus, an alternative specification is as follows:

$$ABRET_M = \alpha_0 + \alpha_1 PCT + \alpha_2 IO + \alpha_3 PCT\_IO + \alpha_4 FOLLOW + \alpha_5 PCT\_FOLLOW + \varepsilon$$

Results are reported in Table 8. I find that participation is marginally significant in the six-month window (p=0.051) and is significant in the nine-month window (p=0.037); however, the variable loses significance as the window is extended to 12 months. The participation-institutional ownership interaction is positive and significant in the first window (p=0.045) and marginally significant in the second (p=0.054). The effect dissipates by the time that the one-year mark is reached. The analyst following interaction is not significant in any of the three windows, which is also the case for the analyst following main effect. These results are generally consistent with, albeit weaker than, those reported in Table 5. The results using size in lieu of analyst following are qualitatively similar.

4.4 Removing the Effect of Pure Vesting Extensions

Participation in a one-for-one exchange that involves only a vesting extension may be more difficult to interpret when employees have positive private information and anticipate lengthy tenure with the company.[19] An employee who has a rosy outlook based on positive private information might not view a one-for-one option exchange with a vesting extension as imposing material costs in return for the benefit of a reduced exercise price. In particular, such an employee might plan to stay with the firm indefinitely and thus view the incremental risk of forfeiture as a result of the vesting extension as negligible. Under these circumstances, positive private information could result in *higher* employee participation, which is inconsistent with my primary hypothesis.

To address this potential inconsistency, I repeat the CEO inclusion analyses from Table 6 but omit exchanges that require only extended vesting in exchange for a decreased exercise price. The results excluding these pure vesting extensions are reported in Table 9. Participation is negative and significant at conventional levels in the six- and nine-month windows, but loses significance in the 12-month window. Similarly, the participation-institutional ownership interaction is positive and significant in the six-month window and marginally significant in the nine-month window. The participation-financial statement informativeness interaction is insignificant across all three windows. In summary, my primary results are robust to the removal of vesting extensions.

[19] Rational employees who have negative private information should still participate in an exchange even if they are not sure whether their employment will continue, as participation is administratively simple and preserves an improved package in the event that the employees' tenure lasts longer than expected. This is consistent with a negative outlook resulting in higher participation, and is therefore in keeping with my primary hypothesis.

4.5 The Impact of Value-for-Value Structure

Value-for-value structure is another characteristic of interest that may affect my primary results. On one hand, a value-for-value exchange structure imposes the most severe economic costs on participating employees in return for the benefit of a more achievable payout hurdle. By this reasoning, value-for-value exchanges appear to present the best setting for detecting the presence of negative private information. On the other hand, value-for-value structure is the design feature most associated with "shareholder friendliness" and is often adopted in response to outside pressure (Larcker et al. 2012); as such, a value-for-value exchange structure may serve as a proxy for a highly transparent information environment that makes detecting private information less likely. It is unclear which of these competing effects will be dominant.

To assess the impact of value-for-value structure, I split the CEO inclusion sample into value-for-value and non-value-for-value subgroups and re-run the main regressions on both subsamples. Results for the non-value-for-value subsample are reported in Table 10. Consistent with previous analyses, the effect of *PCT* in the non-value-for-value subsample is negative and statistically significant in the first two windows (p-values < 0.01). Further, the participation-institutional ownership interaction is positive and highly significant in the first window, and marginally significant in the second window. These results contrast sharply with those of the value-for-value subsample reported in Table 11, which show no significance on the participation variable over the six- and nine-month windows, and only marginal significance in the 12-month window. In untabulated analyses, I extend the measurement window for the dependent

variable to 18 months and 24 months and find no statistically significant effect for participation in the value-for-value subsample. Thus, the transparency effect of value-for-value structure appears to dominate the cost effect.

4.6 Other Returns Considerations

To ensure that my primary conclusions are not driven by the effects of exchange-related announcements, I re-run the main analysis presented in Table 5 using alternative start dates for the compounding of buy-and-hold returns, including the month of exchange inception and the month after the disclosure date. The results are qualitatively similar.

In considering the central question of this study, both the level of information that is already embedded in prices and the speed at which new information is impounded into returns are relevant. Thus far my analyses have been concerned with longer-window effects; short-window effects may also be of interest, however. On one hand, investors may react negatively (but incompletely) to the participation disclosure itself over the short run; on the other hand, they might have a positive reaction to the disclosure in anticipation of valuable retention benefits. To further assess these dynamics as they relate to participation, I compute short-window daily cumulative abnormal returns around the participation disclosure date for three windows and exclude observations for which an earnings or dividend announcement occurred during the window. No statistically significant reaction is discernible in the (-1,1), (-1,5) and (-1,10) windows for the overall mean cumulative abnormal return (Table 12, Panel A). When the observations are partitioned at the 50^{th} percentile of *PCT*, however, the standardized mean abnormal

returns are found to be statistically different between groups for the (-1,1) and (-1,5) windows (Table 12, Panel B). By the (-1,10) window, the significant difference between CARs for the high and low groups disappears.

I next regress short-window returns on the main regression variables for this sample of uncontaminated events. As shown in Table 13, the main effect of *PCT* is positive and significant in the (-1,1) window and is dampened by a negative and significant coefficient on *PCT_FRSQ*. The significance of *PCT* decreases as the window lengthens, and the interaction term becomes insignificant in the (-1,5) and (-1,10) windows.

Partitioning the uncontaminated event sample by whether the CEO is included in the exchange reveals that *PCT* is insignificant across windows for the CEO inclusion subsample (Table 14), but is *positive* and marginally significant to significant across the CEO exclusion subsample and is offset in part by a negative coefficient on *PCT_FRSQ* (Table 15).[20] Taken together, the primary analyses and short-window results suggest that the market assigns some short-term value to the potential retention benefit of exchange participation when the CEO is excluded from the program.

4.7 Alternative Measures of Performance

In this section, I consider the association between participation and two different operating measures—the change in future operating earnings, and the change in future operating cash flows. Abnormal returns are the most natural dependent measure for my primary analyses, as they allow me to test what employees know relative to other market

[20] In untabulated results, I find that significance for all variables disappears for both the combined and partitioned regressions as the window increases to (-1,20) and (-1, 60).

participants and the implications of the information environment. Over longer windows, however, abnormal returns become increasingly difficult to reliably measure for nonrandom samples (e.g., Lyon et al. 1999, Kothari and Warner 2007). Operating measures do not permit the testing of market-related hypotheses, but they do provide an additional channel for assessing whether employees of exchange firms possess information that is eventually reflected in long-run performance.

For this purpose, I use a simple model that expresses a firm's future change in operating earnings (operating cash flows) as a function of its asset base, growth opportunities (book-to-market ratio), and prior change in operating earnings (operating cash flows). The model is a streamlined version of the changes model presented in Aboody et al. (2010), with participation included as an independent variable. The future change in operating earnings (operating cash flows) is measured for the first and second year after the exchange. All change variables are scaled by total assets.

Tables 16 reports results of the changes analyses for the full sample. As anticipated, the coefficient on *PCT* is negative and significant in the one- and two-year-forward earnings change regressions ($p = 0.015$; $p = 0.020$) and is negative and marginally significant in the two-year-forward cash flow change regression ($p=0.056$). (Due to multicollinearity, the other variables exhibit limited or no significance.)

The negative association of *PCT* with changes in future operating performance measures provides additional, albeit indirect, support for H1. Moreover, partitioning the data by whether the CEO is eligible to participate yields results that are broadly consistent with previous analyses: when the CEO is included in the exchange, the

coefficient on *PCT* is negative and marginally significant in the one- and two-year-forward earnings change regressions (p = 0.073; p = 0.081) and is negative and marginally significant in the two-year-forward cash flow change regression (p=0.071), as shown in Table 17. As before, excluding the CEO from the exchange results in no significance for the *PCT* variable (Table 18).

CONCLUSION AND LIMITATIONS

Employee stock option exchange programs offer a unique opportunity to observe eligible employees' collective sentiment about the future prospects of their publicly traded employers. When employees willingly reduce their upside potential by trading out-of-the-money options for replacement compensation with less upside and a reduced payout hurdle, they reveal a low subjective assessment of the firm's future prospects. Similarly, when employees abstain from participating in an exchange, they reveal a higher subjective assessment of the firm's ability to achieve strong performance in future periods. Determining whether their assessments (as conveyed in participation) embed information that is not already known to the broader market is the objective of this study.

An important characteristic of stock option exchange programs from a research design perspective is the timing of their implementation. Broadly speaking, stock option exchange programs are only offered after significant, negative performance shocks. The presence of these adverse shocks renders the modern exchange setting ideal for assessing whether the results of prior research showing that non-executive employees possess valuable private information in other equity contexts are generalizable to non-steady-state conditions.

Using a modern sample of employee stock option exchanges occurring from 2006 to 2010, this study provides evidence that the level of employee participation in an exchange program does contain information about a firm's subsequent stock price performance. Specifically, I find that employee participation is negatively related to abnormal returns in the six-, nine-, and 12-month windows following the exchange. The

relation between participation and returns is weaker when institutional ownership and financial statement informativeness are higher. Furthermore, the relation between participation and future abnormal returns is attributable primarily to exchange events in which the CEO is eligible to participate. These results are robust to the inclusion of controls for market conditions during the Great Recession.

On its face, the lack of significance in the CEO exclusion subsample appears inconsistent with the results of Huddart and Lang (2003) and Babenko and Sen (2012), who find that non-executive employees possess private information that can predict future returns. Yet I can neither conclude that non-CEO participants in the CEO inclusion subsample have no private information nor assert that the CEO's participation itself drives the results. This is the case because aggregation of CEO and non-CEO participation in the tender offer disclosures limits my ability to draw inferences regarding the ultimate source of information among participating employees in the CEO inclusion sample.

Research into the information conveyed by employees' equity compensation decisions is in its nascent stages. By providing insight into the relation between employee participation and future abnormal returns in a modern stock option exchange setting, this study augments a small but growing literature on a topic that is of vital importance to publicly traded employers, equity compensation recipients, regulators, and investors.

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APPENDIX A

MANAGEMENT'S JUSTIFICATIONS TO SHAREHOLDERS

Source: SEC Form DEF 14A, "Notice of Special Meeting of Stockholders to be Held April 21, 2009," filed by NetApp, Inc. on March 23, 2009

Reasons for implementing an exchange program

Our stock price has experienced a significant decline over the past year due in large part to the continued weak economy and overall weakness in the capital markets. Furthermore, many of our top customers operate in industries such as financial services, technology and telecommunications, which have experienced a disproportionately negative effect from the economic downturn. As a result, our largest customers have significantly reduced their spending and some have gone out of business, which has negatively impacted our business. We have taken a number of actions in recent months to cut costs and restructure our business in an effort to return to our business model and increase our market valuation, but those efforts have not had an impact on our stock price to date. Meanwhile, as of February 28, 2009 over 95% of our employees hold stock options which are underwater, and as a result our equity incentive program does not provide the retention or incentive value it is intended to provide. At the same time, the market for key employees remains extremely competitive, notwithstanding the current economy.

Because of the continued challenging economic environment and the lack of impact on our stock price from our efforts to restructure our business, we believe these underwater stock options are no longer effective incentives to motivate and retain our employees. We believe that employees perceive that these options have little or no value. In addition, although these stock options are not likely to be exercised as long as our stock price is lower than the applicable exercise price, they will remain on our books with the potential to dilute stockholders' interests for up to the full remaining term of these options, while delivering little or no retentive or motivation value.

We believe an exchange program is an important component in our strategy to align the interests of our employees and stockholders because it will permit us to:

- motivate eligible employees to continue to build stockholder value and achieve future stock price growth by exchanging underwater stock options for RSUs with new extended vesting periods, and which have a value that moves directly in line with our stock price. We believe that stock options that are significantly underwater do not serve to motivate or help retain our employees. We believe that the option exchange would aid both the motivation and retention of those employees participating in the option exchange, while better aligning the interests of our employees with the interests of our stockholders.

- meaningfully reduce our total number of outstanding stock options, or "overhang," represented by outstanding grants that have exercise prices so high they no longer motivate their holders to remain as our employees. Allowing these grants to remain outstanding does not serve the interests of our stockholders and

does not provide the benefits intended by our equity compensation program. By replacing these grants with a lesser number of RSUs, our overhang and the potential dilution of the stockholders' interests will decrease. We believe that after the exchange program, the overhang provided by our equity grants, including the newly granted RSUs, would represent a more appropriate balance between our objectives for our equity compensation program and our stockholders' interest in minimizing overhang and potential dilution.

- better align compensation costs with the retention and motivation value that we are trying to capture with our outstanding stock option grants. These grants were made at the then fair market value of our common stock. Under applicable accounting rules, we are required to continue to recognize compensation expense related to these grants, even if these grants are never exercised because they remain underwater. We believe it is not an efficient use of corporate resources to recognize compensation expense on awards that never provide value to our employees. By replacing stock options that have little or no retention or incentive value with RSUs that will provide both retention and motivation value while incurring only minimal incremental compensation expense, we will be making more efficient use of our resources.

Why the exchange program is the best alternative

In considering how best to continue to motivate, retain and reward our employees who have options that are underwater, we evaluated several alternatives, including the following:

- *Increase Cash Compensation.* To replace the intended benefits of options, we would need to substantially increase cash compensation. These increases would substantially increase our compensation expense and reduce our cash position and cash flow from operations. In addition, these increases would not reduce our overhang.

- *Grant Additional Equity Awards.* We considered granting employees additional options at current market prices. However, we determined that this alternative would not be feasible due to insufficient shares remaining in our equity plans for a Company-wide retention program and because such additional grants would cause us to exceed our desired "burn rate" for consumption of shares in our equity plans. Further, additional grants would substantially increase our equity award overhang and the potential dilution to our stockholders and would increase our compensation expense accordingly.

- *Exchange Options for Options with a Lower Price.* We considered implementing a program to exchange underwater options for new options having an exercise price equal to the market price of our common stock on the date of the exchange.

However, we believe that an option-for-RSU exchange provides several advantages over an option-for-option exchange program. First, an option-for-RSU exchange program will require us to issue significantly fewer shares than an option-for-option exchange program. thereby providing a more significant reduction in our stockholder dilution and overhang. Also, unlike options, RSUs provide value to employees even if current poor economic conditions continue and our stock price fails to increase. However, if we determine that adverse tax consequences may arise in an option-for-RSU exchange in some non-U.S. jurisdictions, we may grant a lesser number of options rather than RSUs (with appropriate adjustments to the exchange ratios) in exchange for surrendered options in those jurisdictions.

We determined that a program under which employees could exchange eligible options for a lesser number of RSUs was most attractive for a number of reasons, including the following:

- *Reasonable, Balanced Incentives.* Under the exchange program, participating employees will surrender eligible options for a lesser number of RSUs with new vesting requirements. We believe the grant of a lesser number of RSUs is a reasonable and balanced exchange for the eligible options.

- *Restore Retention and Motivation Incentives.* Many companies, especially those in the technology industry, have long used equity awards as a means of attracting, motivating and retaining their best employees, while aligning those employees' interests with those of the stockholders. We continue to believe that equity grants are an important component of our employees' total compensation, and that replacing this component with additional cash compensation to remain competitive could have a material adverse effect on our financial position and cash flow from operations. We also believe that in order to have the desired impact on employee motivation and retention, our employee options would need to be exercisable near or above the current price of our common stock. The failure to address the underwater option issue in the near to medium term will make it more difficult for us to retain our key employees. If we cannot retain these employees, our ability to compete with other companies in our industry could be jeopardized, which could adversely affect our business, results of operations and future stock price. We believe that the grant of RSUs with new extended vesting periods which have a value that moves directly in line with our stock price, an option exchange would aid both the motivation and retention of employees participating in the exchange program.

- *Overhang Reduction.* Not only do the underwater options have little or no retention value, they cannot be removed from our equity award overhang until they are exercised, or are cancelled due to expiration or the employee's termination. Underwater and unvested options also continue to have considerable

compensation expense. The exchange program will reduce our overhang while eliminating the ineffective eligible options that are currently outstanding. Under the proposed exchange program, participating employees will receive RSUs covering a lesser number of shares than the number of shares covered by the surrendered options. By granting a lesser number of RSUs in exchange for options, the number of shares of stock subject to outstanding equity awards will be reduced, thereby reducing our equity overhang. Further, shares cancelled under the Plans (other than our 1999 Plan) will no longer be available for future grants of equity awards, which will further reduce current as well as future equity overhang.

- *Pressure for Additional Grants.* If we are unable to conduct a program in which underwater options with low incentive value may be exchanged for a lesser number of RSUs with higher motivation and retention value, we may be compelled to issue additional options or other equity awards to our employees at current market prices in order to provide our employees with renewed incentive value. Any such additional grants would increase our overhang as well as our compensation expense, and could exhaust our current pool of shares available for future grant.

- *Optimal Alignment of Employee and Stockholder Interests.* The exchange program will allow us to optimize the shares reserved under our 1999 Plan to more effectively align the interests of our employees and our stockholders. A reduced number of RSUs will be granted in exchange for surrendered underwater options. In addition, in order to mitigate the potential dilutive impact of the exchange program to our stockholders, after we grant the new RSUs in exchange for surrendered options, we will reduce the share reserve under the 1999 Plan such that, in effect, we will retain only a sufficient number of shares for the new RSU grants plus an additional 3.5 million of the surrendered shares. Assuming all eligible options are surrendered in the exchange, we would cancel approximately 20.4 million shares from the 1999 Plan after the shares underlying surrendered options are returned to the plan. Furthermore, any shares underlying surrendered options which were granted under any of our other Plans will not be available for future grant. As a result, assuming all eligible options are surrendered in the exchange, we would cancel approximately 8.7 million shares from such other Plans.

The exchange program will take place if and only if it is approved by our stockholders. If our stockholders do not approve the exchange program, eligible options will remain outstanding and in effect in accordance with their existing terms. We will continue to recognize compensation expense for these eligible options even though the options may have little or no retention or motivation value.

APPENDIX B

EXCERPT FROM EXCHANGE PROGRAM TERM SHEET AND Q&A DOCUMENT

Source: SEC Form SC TO-I, EX-99.(A)(1)(A), "Offer to Exchange Certain Outstanding Options for Restricted Stock Units" filed by NetApp, Inc. on May 22, 2009

Q1. What is the offer?

A1. This offer is an opportunity for eligible employees to voluntarily exchange outstanding options with an exercise price greater than or equal to $22.00 per share that were granted under the Plans (as defined below) before June 20, 2008 for RSUs.

[…]

Q3. How many RSUs will I receive for the options that I exchange?

A3. The number of RSUs that you receive will depend on the exercise price of your exchanged options, as follows:

Per Share Exercise Price of Eligible Options	RSUs Granted for Exchanged Options
$22.00 — $27.30	1 RSU for every 5 exchanged options
$27.31 — $32.49	1 RSU for every 6 exchanged options
$32.50 — $37.99	1 RSU for every 7 exchanged options
$38.00 — $46.99	1 RSU for every 10 exchanged options
$47.00 and higher	1 RSU for every 25 exchanged options

As noted above, for purposes of this offer, including the exchange ratios, the term "option" refers to an option to purchase one (1) share of our common stock, and the term "option grant" means a grant of one (1) or more options. For purposes of applying the exchange ratios, fractional RSUs will be rounded down to the nearest whole RSU on a grant-by-grant basis. (See Section 2)

If, with respect to the surrender of options received pursuant to a particular option grant, you would otherwise be entitled to receive fewer than forty (40) RSUs in the exchange, then we will make a cash payment instead of granting RSUs. The cash payment will be equal to the closing market price of a share of NetApp's common stock on the business day immediately prior to the expiration date multiplied by the number of RSUs that would otherwise have been granted in exchange for such surrendered options. The cash payment, less applicable withholdings, will be made as soon as practicable after the RSU grant date and will not be subject to any vesting schedule.

Please note: The exchange ratios apply to each of your option grants separately. This means that all of the outstanding options that you received pursuant to a particular option grant will be aggregated and divided by the applicable exchange ratio. As a result, the various eligible options you hold may be subject to different exchange ratios to the extent that such options were originally received pursuant to different option grants. (See Section 2)

Example: Assume that you have 1,000 outstanding options that you received pursuant to a single option grant, and the exercise price of each such option is $32.00 per share. If you tender all 1,000 options for exchange, you will receive 166 RSUs on the RSU grant date. This number is the result obtained by dividing 1,000 by 6 (i.e. the exchange ratio for an eligible option with an exercise price of $32.00) and rounding down to the nearest whole RSU.

Example: Assume that you have eligible options that you received pursuant to two separate option grants. In the first grant, you received 50 options with an exercise price of $32.00 per share. In the second grant, you received 100 options with an exercise price of $40 per share. Assume the closing market price for NetApp's common stock is $17.00 on the business day immediately prior to the expiration date. If you tender all of the options received pursuant to the two grants (i.e. 150 options), then you will receive a cash payment of $306.00, less applicable withholding. This amount represents the cash value, based on the closing market price of NetApp's common stock on the business day immediately prior to the expiration date, of the 8 RSUs that you would have otherwise received in exchange for the 50 options received in the first option grant and the 10 RSUs that you would have otherwise received in exchange for the 100 options received in the second option grant.

Q4. Who may participate in this offer?

A4. You may participate in this offer if you are an eligible employee of NetApp at the time of this offer and you remain an eligible employee of NetApp or a successor entity through the RSU grant date. In addition, you may participate in this offer only if you reside in the United States, Australia, Austria, People's Republic of China, France, Germany, Hong Kong, India, Israel, Italy, Japan, Korea, the Netherlands, Singapore, Spain, Sweden, Switzerland, or the United Kingdom. Our executive officers and the members of our board of directors may not participate in the offer. (See Section 1)

Q5. Why is NetApp making this offer?

A5. We are making this offer to restore the retention and incentive benefits of our equity awards. We believe that this offer will help us to retain our valuable employees and better align the interests of our employees and stockholders to maximize stockholder value. We issued the currently outstanding options to attract and retain the best available personnel and to provide additional incentives to our employees. However, our stock price, like that of many other companies in our industry, has declined significantly in the past year. As a result, most of our employees hold options with exercise prices significantly higher than the current market price of our common stock. These options are commonly referred to as being "underwater." By making this offer, we intend to provide eligible employees with the opportunity to receive RSUs that have greater retention value because, unlike

underwater options, such RSUs provide value to employees even if our stock price remains depressed. (Section 3)

Q6. Which of my options are eligible?

A6. Your eligible options are those options to purchase shares of common stock of NetApp that have an exercise price greater than or equal to $22.00 per share, were granted under the Plans before June 20, 2008 and remain outstanding and unexercised as of the expiration date, currently expected to be June 19, 2009. For a complete listing of your outstanding options, please refer to your Smith Barney Benefit Access account at **www.benefitaccess.com**, which lists your outstanding options, the grant date of your options, the exercise price of your options and the number of shares subject to your outstanding options. (See Section 2)

Q7. Are there circumstances under which I would not be granted RSUs?

A7. Yes. If, for any reason, you are no longer an employee of NetApp on the RSU grant date, you will not receive any RSUs. Instead, you will keep your current eligible options and the eligible options will vest and expire in accordance with their terms. Except as provided by applicable law and/or any employment agreement between you and NetApp, your employment with NetApp will remain "at-will" regardless of your participation in the offer and can be terminated by you or your employer at any time with or without cause or notice. (See Section 1)

[…]

We also reserve the right, in our reasonable judgment, before the expiration date to terminate or amend the offer and to postpone our acceptance and cancellation of any options elected to be exchanged if any of the events listed in Section 7 of this Offer to Exchange occurs, by giving oral or written notice of the termination or postponement to you or by making a public announcement of the termination. (See Section 15)

[…]

If, with respect to the surrender of options received pursuant to a particular option grant, you would otherwise have been entitled to receive fewer than forty (40) RSUs in the exchange, then we will make a cash payment instead of granting RSUs. The cash payment will be equal to the closing market price of a share of NetApp's common stock on the business day immediately prior to the expiration date multiplied by the number of RSUs that would otherwise have been granted in exchange for such surrendered options. The cash payment, less applicable withholdings, will be made as soon as practicable after the cancellation date and will not be subject to any vesting schedule.

Q8. Am I required to participate in this option exchange?

A8. Participation in this offer is completely voluntary. (See Section 2)

Q9. When will my RSUs vest?

A9. Each RSU represents the right to receive one share of our common stock on a specified future date if the RSU has vested in accordance with the vesting schedules summarized in the table and further described below, subject to your continuing to be an employee or other service provider to NetApp through each relevant vesting date:

Exercise Price	Unvested or Partially Vested Option Grant	Fully Vested Option Grant
$22.00 — $27.30	4 Years (1/4 on each anniversary of grant date)	2 Years (1/2 on each anniversary of grant date)
$27.31 — $32.49	4 Years (1/4 on each anniversary of grant date)	2 Years (1/2 on each anniversary of grant date)
$32.50 — $37.99	4 Years (1/4 on each anniversary of grant date)	2 Years (1/2 on each anniversary of grant date)
$38.00 — $46.99	4 Years (1/4 on each anniversary of grant date)	3 Years (1/3 on each anniversary of grant date)
Equal to or greater than $47.00	4 Years (1/4 on each anniversary of grant date)	3 Years (1/3 on each anniversary of grant date)

- The vesting schedule of the RSUs will be determined on a grant-by-grant basis and depend on the extent to which the option grant surrendered in exchange for such RSUs has vested at the time of such exchange and, for a surrendered option grant that is fully vested, the exercise price.

- None of the RSUs will be vested as of the RSU grant date.

- No RSUs will be scheduled to vest earlier than one year from their date of grant.

- The annual vesting date will be the anniversary of the RSU grant date.

- If the surrendered option grant is entirely unvested or partially vested, then regardless of the exercise price of such surrendered options, the RSU will vest as to one-fourth of the RSUs on each of the first four anniversaries of the grant date,

so that 100% of the RSUs will be vested on the fourth anniversary of the grant date, provided that the eligible employee remains in continued serviced with the Company through each vesting date.

- If the surrendered option grant has an exercise price between $22.00 and $37.99 per share and is fully vested, then the RSUs will vest as to 50% of the RSUs on each of the first two anniversaries of the grant date, so that 100% of the RSUs will be vested on the second anniversary of the grant date, provided the eligible employee remains in continued service with the Company through each vesting date.

- If the surrendered option grant has an exercise price of $38.00 per share or greater and is fully vested, then the RSUs will vest as to one-third of the RSUs on each of the first three anniversaries of the grant date, so that 100% of the RSUs will be vested on the third anniversary of the grant date, provided the eligible employee remains in continued service with the Company through each vesting date.

- We will make minor modifications to the vesting schedule of any RSUs to eliminate fractional vesting (such that a whole number of RSUs will vest on each vesting date); this will be done by rounding up to the nearest whole number of RSUs that will vest on the first vesting date and rounding down on the following vesting date.

- If, with respect to the surrender of options received pursuant to a particular option grant, you would otherwise be entitled to receive fewer than forty (40) RSUs in the exchange, then we will make a cash payment instead of granting RSUs. The cash payment will be equal to the closing market price of a share of NetApp's common stock on the business day immediately prior to the expiration date multiplied by the number of RSUs that would otherwise have been granted in exchange for such surrendered options. The cash payment, less applicable withholdings, will be made as soon as practicable after the RSU grant date and will not be subject to any vesting schedule.

Q10. If I participate in this offer, do I have to exchange all of my eligible options?

A10. You may pick and choose which of your outstanding eligible option grants you wish to exchange. However, if you decide to exchange any options received pursuant to a particular option grant, you must exchange all of the outstanding options received pursuant to such grant (i.e. you must make your election to participate on a grant-by-grant basis). You should note that we are not accepting partial tenders of option grants, except that (a) you may partially tender an option grant covered by a domestic relations order (or comparable legal document as the result of the end of a marriage) (See Question and Answer 11), and (b) you may elect to exchange all of the options received pursuant to such grant that remain unexercised on the cancellation date. (See Section 2)

[…]

Q30. Are you making any recommendation as to whether I should exchange my eligible options?

A30. No. We are not making any recommendation as to whether you should accept this offer. We understand that the decision whether or not to exchange your eligible options in this offer will be a challenging one for many employees. The program does carry risk (see "Risks of Participating in the Offer" beginning on page 14 for information regarding some of these risks), and there are no guarantees that you ultimately would receive greater value from the RSUs you will receive in exchange than you would if you had retained your corresponding options. As a result, you must make your own decision as to whether or not to participate in this offer. For questions regarding personal tax implications or other investment- or tax-related questions, you should talk to your legal counsel, accountant, and/or financial advisor. (See Section 3)

[…]

Risks that are Specific to this Offer

If the price of our common stock increases after the date on which your options are cancelled, your cancelled options might have been worth more than the RSUs that you receive in exchange for them.

Because the exchange ratio of this offer is not one-for-one with respect to all awards, it is possible that, at some point in the future, your eligible options would have been economically more valuable than the RSUs granted pursuant to this offer. For example, if you exchange an option grant for 500 shares with an exercise price of $38.00, you would receive 50 RSUs. Assume, for illustrative purposes only, that three (3) years after the new grant date, the price of our common stock has increased to $55.00 per share. Under this example, if you had kept your exchanged options and exercised them at $55.00 per share, you would have realized pre-tax gain of $8,500, but if you exchanged your options and sold the shares vested pursuant to the RSUs, you would realize only a pre-tax gain of $2,750.

TABLE 1

Panel A: Overview of Sample Selection Procedure

Form SC TO-C Reconciliation, 2006-2010	
Total SC TO-C filings	1882
Less: filings for other transactions	(1487)
Total exchange-related filings	395
Less: 409A exchanges	(40)
Less: additional filings for same exchange	(201)
Subtotal	154
Less: exchanges not completed	(1)
Plus: exchanges from SC TO-I and I/A Forms not already counted above	105
Subtotal	258
Less: observations with missing IDs or variables	49
Final sample for main analysis	209

This table presents a numeric summary of the sample selection procedure and is discussed more fully on pages 19 and 20. Forms SC TO-C, SC TO-I, and SC TO-I/A were obtained from the SEC website.

Panel B: Stock Option Exchange Characteristics

Exchange Terms	
New Options	64.9%
New Restricted Stock	33.2%
Cash	1.9%
Value-for-Value	65.6%
One-for-One	16.0%
Lengthened Vesting	73.7%

This table presents a summary of exchange program terms presented to eligible employees. New Options, New Restricted Stock, and Cash refer to the percentage of firms that offer each type of replacement compensation in exchange for the out-of-the-money options tendered. Value-for-Value refers to exchanges that cap the fair value of the replacement awards to be no higher than the fair value of the old awards at the time of the exchange. One-for- One refers to exchanges that replace each out-of-the-money option tendered with one new options. Lengthened Vesting refers to exchanges that increase vesting time.

TABLE 1 (cont.)

Panel C: Industries Represented

Recreation	2.9%
Apparel	1.4%
Healthcare, Medical Equipment, Pharmaceutical Products	13.3%
Construction and Construction Materials	2.4%
Electrical and Fabricated Equipment, Machinery	2.4%
Planes, Trains, Ships, and Automobiles	2.4%
Petroleum and Natural Gas	2.4%
Communication	4.3%
Personal and Business Services	14.3%
Business Equipment	38.6%
Wholesale and Retail	4.8%
Restaurants, Hotels, Motels	1.9%
Banking, Insurance, Real Estate, Trading	6.7%
Other	1.9%

This table presents the percentage of observations in the sample that fall into each of the listed industries. Both the Personal and Business Services category and the Business Equipment category include firms specializing in software and other computer-related products and services.

TABLE 2

Summary of Firm Characteristics

	Exchanges Sample						Compustat Nonzero Stock Compensation Sample					
	N	Mean	Std	Q1	Med	Q3	N	Mean	Std	Q1	Med	Q3
Market Cap	208	1,750	5,045	103	258	800	30,664	2,844	8,862	49	259	1316
Sales to Assets	208	0.87	0.72	0.46	0.71	1.02	32,861	0.87	0.83	0.25	0.66	1.20
Net Margin	206	-0.52	1.85	-0.28	-0.07	0.02	32,858	-1.91	.48	-0.13	0.03	0.10
Debt to Assets	206	0.21	0.27	0.00	0.09	0.34	32,755	0.27	0.39	0.02	0.17	0.36
Stock Comp.	205	0.09	0.31	0.01	0.02	0.07	32,867	0.26	1.40	0.00	0.01	0.03
OCF Ratio	208	0.74	7.96	-0.51	0.33	1.71	32,828	1.12	4.87	0.10	1.00	1.95
R&D to Sales	206	0.39	1.35	0.00	0.13	0.27	32,867	0.42	2.35	0.00	0.00	0.06
Z Score	196	-0.76	3.92	-1.53	0.34	1.50	26,970	-2.94	16.51	-0.82	0.91	2.04
Tobin's Q	194	0.90	0.96	0.30	0.70	1.13	25,288	1.99	3.77	0.60	1.03	1.85
ROA - NI	208	-0.15	0.28	-0.21	-0.05	0.02	32,855	-0.13	0.59	-0.08	0.01	0.06
Moneyness	206	-0.42	0.35	-0.68	-0.47	-0.25	27,795	0.16	0.95	-0.43	-0.02	0.45

This table presents a side-by-side summary of firm characteristics for exchange firms and the universe of Compustat firms reporting nonzero stock compensation expense from 2006 to 2010. Observations are winsorized at 1% and 99%. MVE is equal to fiscal year-end stock price multiplied by the number of common shares outstanding. Sales to Assets is equal to total revenue divided by total assets as of fiscal year end. Net margin is net income divided by total revenue. Debt to assets is equal to long-term debt (including the current portion) divided by total assets as of fiscal year end. Stock Comp is equal to stock compensation expense divided by total revenue. OCF Ratio is equal to operating cash flow divided by net income. Z Score is the Altman's unlevered z score (MacKie-Mason 1990). Tobin's Q is equal to the sum of MVE, preferred stock, current liabilities netted against current assets, and total long term debt, all divided by total assets. Return on Assets is equal to net income divided by average total assets. Moneyness is equal to the fiscal year end stock price less the weighted average exercise price of options outstanding as of fiscal year end, divided by the weighted average exercise price of options outstanding as of fiscal year end.

TABLE 3

Descriptive Statistics for Regression Variables

	Full Sample					
	N	Mean	Std	Q1	Med	Q3
PCT	209	0.805	0.177	0.716	0.850	0.949
IO	209	0.593	0.282	0.398	0.593	0.844
FRSQ	209	0.507	0.251	0.318	0.510	0.705
FOLLOW	209	1.380	2.340	1.387	1.946	2.485
NOCEO	209	0.560	0.498	0.000	1.000	1.000
ABRET6	209	0.136	0.652	-0.192	0.012	0.217
ABRET9	209	0.128	0.702	-0.232	-0.017	0.267
ABRET12	209	0.239	1.536	-0.352	-0.033	0.283

This table presents descriptive statistics for the full sample. *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *FOLLOW* is the natural logarithm of 1+ the maximum number of analysts following the firm during the year prior to the exchange year. *NOCEO* equals 1 if the CEO is not included in the exchange and 0 otherwise. *ABRET6*, *ABRET9*, and *ABRET12* are characteristics-based buy-and-hold abnormal returns calculated over the six-, nine-, and 12-month periods following exchange inception using the method in Daniel et al. (1997) and adjusting for delistings as in Beaver et al. (2007).

TABLE 4

Pearson and Spearman Correlations

VARIABLE	ABRET6	ABRET9	ABRET12	PCT	IO	FOLLOW	NOCEO	FRSQ
ABRET6	1.00	0.84	0.70	-0.06	-0.17	0.00	-0.17	-0.02
	_	[0.00]	[0.00]	[0.38]	[0.01]	[0.95]	[0.01]	[0.75]
ABRET9	0.77	1.00	0.83	-0.09	-0.13	0.03	-0.11	0.06
	[0.00]	_	[0.00]	[0.21]	[0.06]	[0.67]	[0.11]	[0.41]
ABRET12	0.68	0.85	1.00	-0.04	-0.10	0.03	-0.14	0.08
	[0.00]	[0.00]	_	[0.52]	[0.13]	[0.69]	[0.04]	[0.27]
PCT	0.01	-0.05	-0.06	1.00	0.01	-0.14	-0.19	0.01
	[0.88]	[0.49]	[0.37]	_	[0.87]	[0.04]	[0.01]	[0.94]
IO	-0.13	-0.11	-0.09	-0.03	1.00	0.45	0.38	-0.06
	[0.06]	[0.11]	[0.19]	[0.63]	_	[0.00]	[0.00]	[0.37]
FOLLOW	-0.01	0.00	-0.03	-0.19	0.47	1.00	0.30	0.04
	[0.93]	[0.99]	[0.70]	[0.01]	[0.00]	_	[0.00]	[0.57]
NOCEO	-0.05	0.01	-0.05	-0.23	0.37	0.32	1.00	-0.10
	[0.49]	[0.89]	[0.43]	[0.00]	[0.00]	[0.00]	_	[0.16]
FRSQ	0.02	0.11	0.10	0.03	-0.06	0.10	-0.09	1.00
	[0.82]	[0.10]	[0.15]	[0.66]	[0.36]	[0.15]	[0.17]	_

This table presents Pearson (upper triangle) and Spearman (lower triangle) correlations for the full sample. *ABRET6*, *ABRET9*, and *ABRET12* are characteristics-based buy-and-hold abnormal returns calculated over the six-, nine-, and 12-month periods using the method in Daniel et al. (1997) and adjusting for delistings as in Beaver et al. (2007). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FOLLOW* is the natural logarithm of 1+ the maximum number of analysts following the firm during the year prior to the exchange year. *NOCEO* equals 1 if the CEO is excluded from the exchange, and 0 otherwise. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004).

TABLE 5

Characteristics-Based Buy-and-Hold Abnormal Returns and Exchange Participation – Full Sample

	H_a Sign	6 Months		9 Months		12 Months	
Intercept		1.58	**	1.71	**	1.93	**
		[2.36]		[2.53]		[2.27]	
PCT	-	-1.42	*	-1.82	**	-1.98	**
		[-1.91]		[-2.32]		[-1.97]	
IO		-1.95	**	-1.98	**	-2.73	*
		[-2.57]		[-2.41]		[-1.95]	
PCT_IO	+	1.88	**	2.06	**	2.71	*
		[2.20]		[2.17]		[1.71]	
FRSQ		-0.46		-0.49		0.17	
		[-0.50]		[-0.46]		[0.10]	
PCT_FRSQ	+	0.46		0.79		0.34	
		[0.45]		[0.66]		[0.18]	
R-square		0.05		0.04		0.02	
N		209		209		209	

This table presents the three returns regressions for the full sample. The dependent variable is characteristics-based buy-and-hold abnormal returns calculated over the six-, nine-, or 12-month period following exchange inception using the method in Daniel et al. (1997) and adjusting for delistings as in Beaver et al. (2007). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *PCT_IO* and *PCT_FRSQ* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 6

Characteristics-Based Buy-and-Hold Abnormal Returns and Exchange Participation – CEO Inclusion Sample

	H_a Sign	6 Months		9 Months		12 Months	
Intercept		4.64	***	4.39	***	4.67	**
		[3.14]		[3.28]		[2.59]	
PCT	-	-4.76	***	-4.94	***	-5.40	***
		[-2.98]		[-3.32]		[-2.64]	
IO		-2.82	**	-2.34	*	-3.61	
		[-2.28]		[-1.87]		[-1.62]	
PCT_IO	+	2.95	**	2.71	*	4.23	*
		[2.12]		[1.87]		[1.68]	
FRSQ		-3.71	*	-3.63	*	-2.51	
		[-1.91]		[-1.68]		[-0.78]	
PCT_FRSQ	+	3.99	*	4.38	*	3.87	
		[1.86]		[1.85]		[1.06]	
R-square		0.11		0.10		0.03	
N		92		92		92	

This table presents the three returns regressions for the sample of firms that include the CEO in the exchange. The dependent variable is characteristics-based buy-and-hold abnormal returns calculated over the six-, nine-, or 12-month period following exchange inception using the method in Daniel et al. (1997) and adjusting for delistings as in Beaver et al. (2007). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *PCT_IO* and *PCT_FRSQ* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 7

Characteristics-Based Buy-and-Hold Abnormal Returns and Exchange Participation – CEO Exclusion Sample

	H_a Sign	6 Months	9 Months	12 Months
Intercept		-0.04	0.04	-0.04
		[-0.11]	[0.08]	[-0.06]
PCT	-	0.38	0.41	0.61
		[0.65]	[0.60]	[0.65]
IO		-0.55	-0.83	-0.67
		[-1.04]	[-1.20]	[-0.81]
PCT_IO	+	0.25	0.35	0.09
		[0.35]	[0.41]	[0.08]
FRSQ		0.50	0.87	1.04
		[0.93]	[1.07]	[1.21]
PCT_FRSQ	+	-0.58	-0.90	-1.28
		[-0.90]	[-0.96]	[-1.30]
R-square		0.07	0.09	0.04
N		117	117	117

This table presents the three returns regressions for the sample of firms that exclude the CEO from the exchange. The dependent variable is characteristics-based buy-and-hold abnormal returns calculated over the six-, nine-, or 12-month period following exchange inception using the method in Daniel et al. (1997) and adjusting for delistings as in Beaver et al. (2007). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *PCT_IO* and *PCT_FRSQ* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 8

Characteristics-Based Buy-and-Hold Abnormal Returns and Exchange Participation – Alternative Specification

	H_a Sign	6 Months		9 Months		12 Months	
Intercept		1.30	**	1.40	**	1.94	*
		[2.42]		[2.54]		[1.76]	
PCT	-	-1.18	*	-1.32	**	-1.75	
		[-1.96]		[-2.10]		[-1.43]	
IO		-1.91	**	-1.96	**	-2.77	*
		[-2.54]		[-2.42]		[-1.83]	
PCT_IO	+	1.73	**	1.85	*	2.38	
		[2.01]		[1.94]		[1.31]	
FOLLOW		0.01		0.02		0.03	
		[0.35]		[0.65]		[0.51]	
PCT_FOLLOW	+	0.04		0.03		0.12	
		[0.43]		[0.19]		[0.40]	
R-square		0.06		0.05		0.03	
N		213		213		213	

This table presents the three alternative returns regressions for the full sample. The dependent variable is characteristics-based buy-and-hold abnormal returns calculated over the six-, nine-, or 12-month period following exchange inception using the method in Daniel et al. (1997) and adjusting for delistings as in Beaver et al. (2007). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FOLLOW* is the natural logarithm of 1+ the maximum number of analysts following the firm during the year prior to the exchange year. *PCT_IO* and *PCT_FOLLOW* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 9

Characteristics-Based Buy-and-Hold Abnormal Returns and Exchange Participation – CEO Inclusion Sample

Pure Vesting Extensions Excluded

	H_a Sign	6 Months		9 Months		12 Months
Intercept		3.68	*	3.02	**	2.78
		[1.95]		[2.21]		[1.20]
PCT	-	-4.01	**	-3.68	**	-3.68
		[-2.02]		[-2.35]		[-1.39]
IO		-2.67	*	-2.44	*	-3.47
		[-1.98]		[-1.89]		[-1.43]
PCT_IO	+	2.88	**	2.97	*	4.24
		[1.89]		[1.91]		[1.50]
FRSQ		-2.31		-1.50		0.10
		[-1.04]		[-.78]		[0.03]
PCT_FRSQ	+	2.87		2.32		1.56
		[1.19]		[1.06]		[0.37]
R-square		0.08		0.07		0.03
N		69		69		69

This table presents the three returns regressions for the sample of exchanges that both include the CEO and exclude pure vesting extensions. The dependent variable is characteristics-based buy-and-hold abnormal returns calculated over the six-, nine-, or 12-month period following exchange inception using the method in Daniel et al. (1997) and adjusting for delistings as in Beaver et al. (2007). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *PCT_IO* and *PCT_FRSQ* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 10

Characteristics-Based Buy-and-Hold Abnormal Returns and Exchange Participation – CEO Inclusion Sample

Non-Value-for-Value Exchanges Only

	H_a Sign	6 Months		9 Months		12 Months
Intercept		7.00	***	5.95	***	4.83
		[3.22]		[3.00]		[1.38]
PCT	-	-6.84	***	-6.31	***	-5.05
		[-3.01]		[-2.95]		[-1.34]
IO		-8.09	***	-5.82	*	-7.10
		[-3.00]		[-1.90]		[-1.27]
PCT_IO	+	8.90	***	6.68	*	8.52
		[3.09]		[2.01]		[1.41]
FRSQ		-3.91	*	-3.23		1.13
		[-1.71]		[-1.23]		[0.26]
PCT_FRSQ	+	3.52		3.64		-0.48
		[1.46]		[1.31]		[-0.11]
R-square		0.24		0.15		0.05
N		44		44		44

This table presents the three returns regressions for the sample of non-value-for-value exchanges that include the CEO. The dependent variable is characteristics-based buy-and-hold abnormal returns calculated over the six-, nine-, or 12-month period following exchange inception using the method in Daniel et al. (1997) and adjusting for delistings as in Beaver et al. (2007). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *PCT_IO* and *PCT_FRSQ* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 11

Characteristics-Based Buy-and-Hold Abnormal Returns and Exchange Participation – CEO Inclusion Sample

Value-for-Value Exchanges Only

	H_a Sign	6 Months		9 Months		12 Months	
Intercept		3.32		3.39		6.15	*
		[1.23]		[1.48]		[1.71]	
PCT	-	-3.59		-3.96		-7.09	*
		[-1.22]		[-1.58]		[-1.80]	
IO		0.05		0.07		0.18	
		[0.05]		[0.07]		[0.14]	
PCT_IO	+	-0.36		-0.03		-0.12	
		[-0.27]		[-0.02]		[-0.08]	
FRSQ		-4.16		-4.15		-7.54	*
		[-1.45]		[-1.68]		[-1.97]	
PCT_FRSQ	+	4.86		4.92	*	8.75	**
		[1.56]		[1.81]		[2.10]	
R-square		0.09		0.10		0.20	
N		49		49		49	

This table presents the three returns regressions for the sample of value-for-value exchanges that include the CEO. The dependent variable is characteristics-based buy-and-hold abnormal returns calculated over the six-, nine-, or 12-month period following exchange inception using the method in Daniel et al. (1997) and adjusting for delistings as in Beaver et al. (2007). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *PCT_IO* and *PCT_FRSQ* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 12

Panel A: Short-Window Returns around the Participation Disclosure Date

	(-1,1)	(-1,5)	(-1,10)
Mean CAR	-0.24%	0.42%	1.13%
Patell's t-statistic	0.21	0.59	0.65
N	197	197	197

This table presents short-window mean cumulative abnormal returns around the participation disclosure date for uncontaminated participation disclosure events. ***, **, and * represent significance at the .01, .05, and .10 levels, respectively.

Panel B: Short-Window Returns around the Participation Disclosure Date for Low and High Participation Exchanges

	(-1,1)		(-1,5)		(-1,10)	
	Low	High	Low	High	Low	High
Mean CAR	-1.08%	0.60%	-1.48%	2.34%	-0.12%	2.40%
F test/p-value	7.53***		9.34***		2.53	
N	99	98	99	98	99	98

This table presents short-window mean cumulative abnormal returns around the disclosure date for uncontaminated participation disclosure events, partitioned into two groups using the median value of the participation rate. The F-statistic tests the null hypothesis that the standardized mean abnormal returns of the high and low groups are equal. ***, **, and * represent significance of the F-statistic at the .01, .05, and .10 levels, respectively.

TABLE 13

Short-Window Cumulative Abnormal Returns and Exchange Participation—Full Sample

	(-1 , 1)		(-1 , 5)		(-1, 10)	
Intercept	-0.17	***	-0.16		-0.08	
	[-2.38]		[-1.52]		[-0.75]	
PCT	0.22	**	0.25	*	0.14	
	[2.15]		[1.87]		[1.10]	
IO	0.08		0.08		-0.12	
	[0.73]		[0.53]		[-0.82]	
PCT_IO	-0.09		-0.13		0.09	
	[-0.71]		[-0.71]		[0.50]	
FRSQ	0.13	**	0.05		0.19	*
	[1.99]		[0.52]		[1.73]	
PCT_FRSQ	-0.20	**	-0.11		-0.24	
	[-2.11]		[-0.86]		[-1.65]	
R-square	0.07		0.08		0.04	
N	177		177		177	

This table presents three short-window returns regressions for the full sample of uncontaminated exchange events. The dependent variable is the cumulative abnormal return over the (-1,1), (-1,5) and (-1,10) windows as computed using the Fama-French three factor model with momentum (Carhart 1997). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *PCT_IO* and *PCT_FRSQ* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 14

Short-Window Cumulative Abnormal Returns and Exchange Participation—CEO Inclusion Sample

	(-1, 1)		(-1, 5)	(-1, 10)
Intercept	-0.19		-0.28	0.08
	[-1.39]		[-1.41]	[0.40]
PCT	0.24		0.35	-0.05
	[1.36]		[1.55]	[-0.22]
IO	0.31	**	0.35	-0.08
	[2.40]		[1.34]	[-0.28]
PCT_IO	-0.33	**	-0.40	0.09
	[-2.03]		[-1.25]	[0.25]
FRSQ	-0.08		-0.01	-0.13
	[-0.37]		[-0.03]	[-0.44]
PCT_FRSQ	-0.01		-0.05	0.11
	[-0.03]		[-0.16]	[0.32]
R-square	0.11		0.06	0.01
N	73		73	73

This table presents three short-window returns regressions for the sample of uncontaminated events for which the CEO was included in the exchange. The dependent variable is the cumulative abnormal return over the (-1,1), (-1,5) and (-1,10) windows as computed using the Fama-French three factor model with momentum (Carhart 1997). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *PCT_IO* and *PCT_FRSQ* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 15

Short-Window Cumulative Abnormal Returns and Exchange Participation—CEO Exclusion Sample

	(-1, 1)		(-1, 5)		(-1, 10)	
Intercept	-0.19	*	-0.16		-0.29	**
	[-1.98]		[-1.38]		[-2.56]	
PCT	0.29	*	0.31	*	0.49	***
	[1.89]		[1.91]		[2.97]	
IO	0.09		0.07		0.10	
	[0.60]		[0.46]		[0.69]	
PCT_IO	-0.19		-0.21		-0.30	
	[-0.91]		[-1.00]		[-1.46]	
FRSQ	0.11	*	0.02		0.30	***
	[1.70]		[0.24]		[2.77]	
PCT_FRSQ	-0.12		-0.06		-0.37	***
	[-1.43]		[-0.52]		[-2.74]	
R-square	0.21		0.23		0.16	
N	104		104		104	

This table presents three short-window returns regressions for the sample of uncontaminated events for which the CEO was excluded from the exchange. The dependent variable is the cumulative abnormal return over the (-1,1), (-1,5) and (-1,10) windows as computed using the Fama-French three factor model with momentum (Carhart 1997). *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *IO* is the percentage of institutional holdings as of the most recent quarter ended prior to the exchange. *FRSQ* is the R^2 from a financial statement informativeness regression, computed as in Frankel and Li (2004). *PCT_IO* and *PCT_FRSQ* are interaction variables. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 16

Changes in Future Operating Earnings and Cash Flows—Full Sample

	ΔEarnings		ΔCash Flow	
	1 Year	2 Years	1 Year	2 Years
Intercept	0.157	0.134	0.092 *	0.142
	[1.52]	[0.74]	[1.71]	[1.37]
PCT	-0.140 **	-0.191 **	-0.089	-0.236 *
	[-2.46]	[-2.34]	[-1.60]	[-1.92]
LAG_DEP	-0.386	-0.884 *	-0.931 *	-1.705
	[-1.21]	[-1.67]	[-1.94]	[-1.65]
ASSETS	-0.001	0.013	0.003	0.016
	[-0.07]	[0.49]	[0.29]	[0.77]
BTM	0.001	-0.006	-0.017 ***	-0.026 *
	[0.17]	[-0.50]	[-2.65]	[-1.66]
R-square	0.09	0.17	0.27	0.27
N	223	205	227	208

This table presents regressions that model changes in operating earnings and operating cash flows one and two years forward. The dependent variable is the change in annual operating income before depreciation (cash flow from operating activities) one or two years after the current year, scaled by total assets at year end. *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *LAG_DEP* is the first lag of the change in operating earnings (operating cash flow) scaled by assets (measured from the prior year to the current year). *ASSETS* is the natural logarithm of total assets. *BTM* is the book to market ratio. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 17

Changes in Future Operating Earnings and Cash Flows—CEO Inclusion Sample

	ΔEarnings		ΔCash Flow	
	1 Year	2 Years	1 Year	2 Years
Intercept	0.124	0.040	0.108	0.154
	[0.47]	[0.08]	[0.87]	[0.51]
PCT	-0.216 *	-0.308 *	-0.150	-0.403 *
	[-1.81]	[-1.77]	[-1.50]	[-1.83]
LAG_DEP	-0.378	-0.904 *	-1.159 *	-2.194 *
	[-1.14]	[-1.67]	[-1.84]	[-1.67]
ASSETS	0.020	0.055	0.012	0.046
	[0.51]	[0.75]	[0.55]	[0.98]
BTM	-0.010	-0.020	-0.016 **	-0.030
	[-1.13]	[-1.25]	[-2.01]	[-1.58]
R-square	0.10	0.18	0.32	0.34
N	96	85	96	85

This table presents regressions that model changes in operating earnings and operating cash flows one and two years forward for the sample of firms that include the CEO in the exchange. The dependent variable is the change in annual operating income before depreciation (cash flow from operating activities) one or two years after the current year, scaled by total assets at year end. *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *LAG_DEP* is the first lag of the change in operating earnings (operating cash flow) scaled by assets (measured from the prior year to the current year). *ASSETS* is the natural logarithm of total assets. *BTM* is the book to market ratio. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

TABLE 18

Changes in Future Operating Earnings and Cash Flows—CEO Exclusion Sample

	ΔEarnings				ΔCash Flow			
	1 Year		2 Years		1 Year		2 Years	
Intercept	0.167	***	0.150	***	0.083	**	0.062	
	[3.71]		[2.94]		[2.51]		[1.51]	
PCT	-0.057		-0.044		-0.028		-0.011	
	[-1.27]		[-0.75]		[-0.78]		[-0.24]	
LAG_DEP	-0.253		-0.270	*	-0.382	***	-0.404	***
	[-1.61]		[-1.74]		[-3.37]		[-4.04]	
ASSETS	-0.014	***	-0.008	*	-0.004		-0.002	
	[-2.77]		[-1.69]		[-0.91]		[-0.43]	
BTM	0.012		-0.011		-0.021	**	-0.023	
	[1.26]		[-0.62]		[-2.19]		[-1.55]	
R-square	0.13		0.07		0.19		0.16	
N	128		121		132		124	

This table presents regressions that model changes in operating earnings and operating cash flows one and two years forward for the sample of firms that exclude the CEO from the exchange. The dependent variable is the change in annual operating income before depreciation (cash flow from operating activities) one or two years after the current year, scaled by total assets at year end. *PCT* is the percentage of eligible options that were exchanged in the program as disclosed in the tender offer statement. *LAG_DEP* is the first lag of the change in operating earnings (operating cash flow) scaled by assets (measured from the prior year to the current year). *ASSETS* is the natural logarithm of total assets. *BTM* is the book to market ratio. ***, **, and * represent significance at the .01, .05, and .10 levels (two-tailed) as measured using heteroskedasticity-robust standard errors (t-statistics reported in brackets).

FIGURE 1

Examples of an Employee Stock Option Exchange Web Portal

Source: SEC Form SC TO-I, EX-99.(A)(1)(G),"Screen Shots of the Offer Website" filed by NetApp, Inc. on May 22, 2009

A. Online Election Form

HOME E-MAIL CONTACT US LOG OUT

Need Help? EMAIL:optexch@netapp.com

NetApp
Go further, faster

Change Password | Election Info | Make An Election

ELECTION FORM

Offer to Exchange Certain Outstanding Options for Restricted Stock Units Dated Friday May 22, 2009

This Offer expires at 9:00 pm Pacific Daylight Time on Friday June 19, 2009, unless the Offer is extended

Name: Generic User

Select "Yes" or "No" under the "Elect to Exchange Eligible Options" column to indicate your decision to tender for exchange your Eligible Options. By selecting "Yes", you are indicating your decision to tender for exchange your Eligible Options for new Restricted Stock Units (RSUs). By selecting "No", you are indicating your decision NOT to tender for exchange your Eligible Options for new RSUs. If you select "No", such Eligible Options will not be tendered for exchange and will remain outstanding under the terms and conditions as set forth in the relevant agreement related to such option grant.

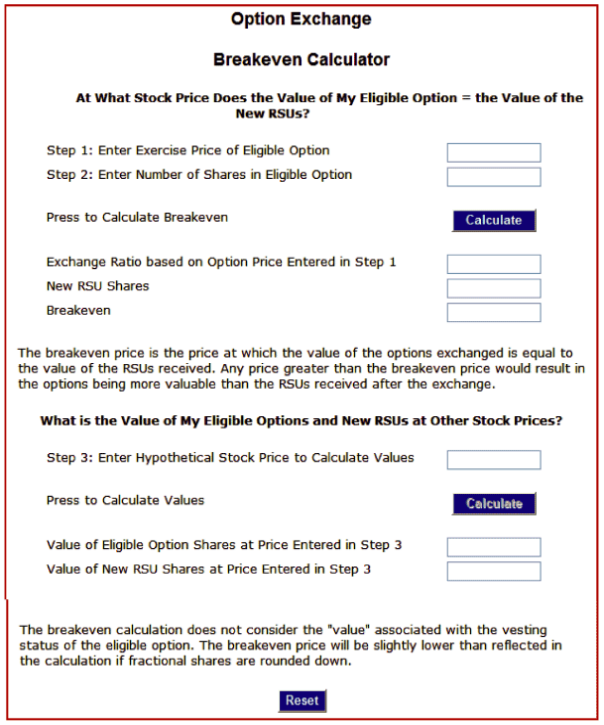
Under the terms of this Offer, we may settle surrendered options for cash instead of RSUs if an Eligible Option would otherwise be exchanged for fewer than forty (40) RSUs. The cash payment would be in an amount equal to the closing market price of a share of NetApp stock on the business day prior to the expiration date of this Offer, multiplied by the number of RSUs that would otherwise be granted in the exchange, as indicated in the "New RSU Shares" column.

Breakeven Calculator

Grant Date	Option Number	Exercise Price per Share	Outstanding Options Eligible for Exchange	Vested Options	Unvested Options	Option Expiration Date	Exchange for RSUs or Cash	New RSU Shares	New RSU Vesting Term	Elect to Exchange Eligible Options?
Jan 01, 2005	123456	$39.8300	100	60	40	Jan 01, 2015	Cash	10	N/A	○ Yes ◉ No
Dec 01, 2005	987654	$31.7300	730	584	146	Dec 01, 2015	RSU	121	4 Years	○ Yes ◉ No

Return to Previous Screen | Next

B. Online Breakeven Calculator



Option Exchange

Breakeven Calculator

At What Stock Price Does the Value of My Eligible Option = the Value of the New RSUs?

Step 1: Enter Exercise Price of Eligible Option

Step 2: Enter Number of Shares in Eligible Option

Press to Calculate Breakeven — Calculate

Exchange Ratio based on Option Price Entered in Step 1

New RSU Shares

Breakeven

The breakeven price is the price at which the value of the options exchanged is equal to the value of the RSUs received. Any price greater than the breakeven price would result in the options being more valuable than the RSUs received after the exchange.

What is the Value of My Eligible Options and New RSUs at Other Stock Prices?

Step 3: Enter Hypothetical Stock Price to Calculate Values

Press to Calculate Values — Calculate

Value of Eligible Option Shares at Price Entered in Step 3

Value of New RSU Shares at Price Entered in Step 3

The breakeven calculation does not consider the "value" associated with the vesting status of the eligible option. The breakeven price will be slightly lower than reflected in the calculation if fractional shares are rounded down.

Reset